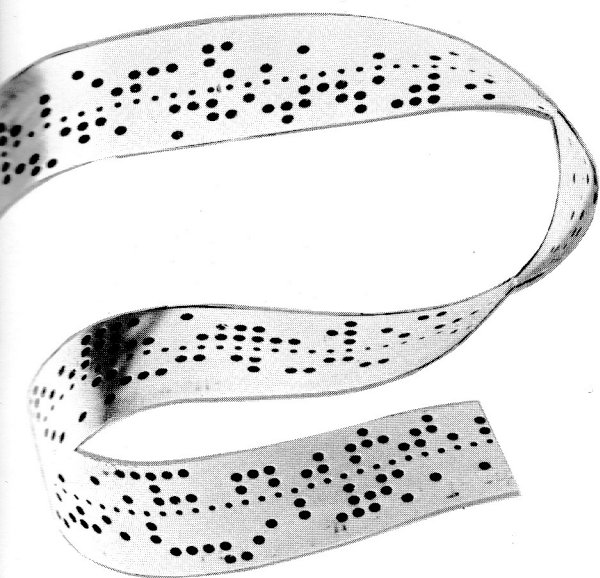


**BUYERS' GUIDE AND REFERENCE HANDBOOK**

# **PHOTOCOMPOSITION**

**METHODS AND EQUIPMENT**



**MANUFACTURERS**

**DISTRIBUTORS**

**SPECIFICATIONS**

**DESCRIPTIONS**

**ILLUSTRATIONS**

**HERMAN SOBLICK, B.S., M. A.**

**QUAD PUBLISHING CO., INC.  
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Herman E. Soblick

June, 1964

## FOREWORD

The introduction of new methods of type setting and the amount of new equipment brought into the composing room in the last decade has revolutionized the printing industry, and will continue to do so for many years to come. Few, if any active printers today can remember the last such revolution which took place around the turn of the century when the linotype and other type setting machines were introduced.

If Johannes Gutenberg, the inventor of movable type, and Benjamin Franklin, the patron saint of American printers, could have visited an American printing plant fifteen years ago, they would have had practically no trouble at all adjusting to the changes that had taken place since the days when they were active printers. Today, with new technology and new methods of typesetting, they would have to learn a new trade.

It is hard to find another established industry in the world today which is changing more rapidly than the printing industry. Companies such as du Pont, Kodak, 3 M, and G. E. to name a few, whose main products are not printing or printing equipment, have entered the printing industry in one way or another. These companies are producing machines and equipment that require skills never before needed in a printing plant.

New methods bring new machines and equipment. With them also comes a new set of skills and work patterns foreign to most printers. This means that it has become necessary for those presently employed in the industry to learn these new skills and methods. It is not only necessary to learn these skills but these methods must be evaluated to see how they can be used in the different process plants.

The information appearing in this resource unit on new printing methods and machines can be used by printers, lithographers, typographic composition shops, teachers of printing and graphic arts, advertising agencies, commercial and industrial art studios, publishers, printing salesmen, manufacturers, and anyone responsible for the buying of printing or printing equipment.

This information can also be used by the teacher of printing in related technical classes or with any group that has an understanding of composing room activities and procedures.

### New Methods in the Composing Room

The new methods that have found their way into the composing room in the last decade are those which not only use existing methods and

machines commonly available to all printers but others that are completely new.

These methods also divide themselves into two main categories: The hot metal type, by which we can print directly in the letterpress process. The cold type and phototypesetting method that does not permit direct printing.

These new variations in both categories fall into the following classifications:

- I. **Phototypography**
  - A. Photo-lettering (Display)
  - B. Phototypesetting (Text)
  - C. Automatic Developing
- II. **Letters for Paste-up**
  - A. Paper
  - B. Card
  - C. Acetate
  - D. Plastic
  - E. Transfer Letters
- III. **Typewriter Composition**
  - A. Those with special faces.
  - B. Those that can change type faces.
  - C. Those with proportional spaced characters that can justify lines with a second typing.
  - D. Those that can punch a tape that can be fed into another machine to produce hot metal or cold type composition.
  - E. Special typewriters.
  - F. The typewriter attachments that can be used on most typewriters to guide the typist for retyping justified lines.
  - G. Other typewriter attachments.
- IV. **Lettering Guides**
  - A. Pantograph
  - B. Stencils
- V. **Directory and Listing Systems**
  - A. Sequential Card Cameras.
  - B. Page Make-up on Panels.
- VI. **Tape-fed Equipment**
  - A. The methods used to punch tapes and the tape reading equipment.
  - B. The linecasting machines on which the type will be set automatically from these tapes.
- VII. **Electronic Machines and Computers**
- VIII. **Photo Modification Cameras**

## IX. Conversion Processes

- A. Using a camera to photograph hot metal type.
- B. Pulling reproduction proofs on acetates, special non-fibrous papers and special conversion films.
- C. Using direct image offset plates.

## X. Hot Metal Paste-up

### Background of Hot Metal Type

In order to understand the hot metal method of typesetting, one must understand how printing types are made. Hot metal type made today still basically uses an alloy that Johannes Gutenberg, the inventor of movable type, used when he cast his movable type.

Hot metal type is the conventional method of typesetting. It employs the use of an alloy of lead, tin and antimony in a molten state that is poured or forced by a plunger in a well into molds or matrices and cooled. From the mold or matrices come a single three-dimensional character or a slug or line of type. This character or slug in the United States is always .918" high. (This height will vary in different countries a few thousandths more or less.) The point size height of the letter and the width of these types will vary with the design of the letter. Examples of hot metal type cast as individual letters are foundry type and monotype. Hot metal type, cast as a slug or line of type, is cast on Linotype, Intertype, Ludlow, Nebitype or APL machines. Hot metal type can also be cast in sections or full pages by the stereotype duplicating method of platemaking.

By the letterpress process, printing can be done directly from the hot metal type.

### Background of Cold Type and Phototypography

In order to understand the "cold type" method of typesetting, we must first realize that we can not print directly from cold type.

Cold type is produced by four basic methods, all of which fulfill the same purpose. From the assembled cold type, a printing plate must be made from which the printing will actually be done.

The four methods of setting cold type and photocomposition are:

#### I. Phototypography which is divided into two categories.

- A. **Photo lettering** is commonly used for display lines and headings. In most cases it is produced on strips of photographic film or paper where one letter at a time is exposed in a machine which is basically a contact printer. Some machines on which photo lettering is done can do a lot more than produce a contact print. They can also repropotion and italicize.

6 B. **Phototypesetting** is a method used where a large amount of type setting is needed. Some of the machines that produce it have been adapted from the hot metal machine made by the same manufacturer while others are entirely new. Where the machine has been adapted from the hot metal machine, the metal pot has been removed and replaced by a camera and a roll of film or paper. Other phototypesetting machines employ electronics and/or a perforated paper or magnetic tape.

II. **Letters for Paste-up** are alphabets, symbols, signs, ornaments and words that come on paper, card, acetate, plastic and transfer letters. This method of typesetting is used largely for display lines and headings.

III. **Typewriter Composition** is that phase of cold type that is set on a typewriter. Type set by this method is photographed to make a negative. From this negative a printing plate can be made. It is also possible to type directly on a direct image offset printing plate. Typewriter composition is used where large amounts of typesetting is needed.

IV. **Lettering Guides** are instruments, templates and stencils used to outline and produce full letters.

It is possible to use a combination of these methods in a single job, just as linotype, Ludlow and foundry type are combined into a job assembled by hot metal type.

When using cold type and photocomposition methods of typesetting, all parts of a job are assembled and placed in proper relation to each other and then photographed to get a negative. From this negative a printing plate is made and the job printed. By using phototypography, as one of the four methods of setting type, the intermediate photograph to make a negative can sometimes be by-passed.

### Conclusion

Even though new methods have proved themselves to be an economical method of typesetting, many plants still hesitate to use them because:

1. they are afraid they cannot show immediate savings.
2. they are afraid that initial costs will be too high.
3. they do not know what machines, tools, equipment and materials are available in the market.
4. they do not know how to correct tape.

From this information, the persons previously stated in the foreword can learn about the changes that have and are still taking place in the composing room.

It will also give these people a basis for discussing, comparing and evaluating these machines, tools, equipment and materials. They will

also find out what they are capable of doing, how they can be used to best advantage in the production of a job, and where they can be obtained.



# PHOTO LETTERING MACHINES

Photo lettering machines are sometimes called desk-top photo composing machines because most of them are small, portable, light in weight, and will fit on an office desk or table. They are manually operated and are generally used for setting display lines or headings from individual letters under normal room lighting. Most of them are contact print boxes that have an exposure lamp to expose individual letters on film or paper.

All these machines vary in price from about \$140 to \$10,000. Some prices include a selection of type fonts, paper, film, chemicals and developing trays. Some manufacturers have monthly rental plans for their machines and type fonts with an option to buy by paying the difference between the rental and full purchase price.

The photo lettering machines that are presently available, together with a description of them and what they are capable of doing, follows.

# ADDITYPE

This machine is made for cartographic and other similar uses. It is used for setting lines on sheets of flat film up to 5-1/8" x 7-1/8". A framed matrix plate 7-1/2" x 14-13/16" with clear letters on a black background or black letters on a clear background is used to set type in twelve sizes from 4 to 28 point. A maximum of 120 signs, symbols or characters can be placed on each matrix plate. Line for line setting is possible.

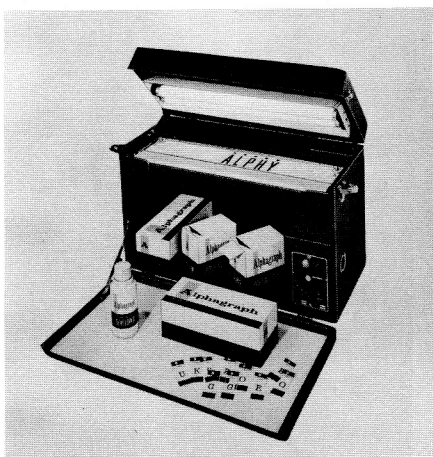
The Additype has a line width scale with an adjusting pointer and stop, a line position indicator, a twelve-part objective revolving device, an electronic timing switch, a light intensity regulator and a foot contact switch.

The machine stands on four legs and is five feet wide, 33-1/2" deep and 53-1/2" high.

**The Additype is available from:**

**VEB Reprotechnik**

**Leipzig, Eastern Zone, Germany**



## ALPHAGRAPH

This machine is a self-contained and portable box that uses film letters held in place magnetically to set headings up to 144 point and 16-1/2" long on strips of film or paper. It can be used in daylight or under normal room lighting and can be read by the operator before exposing. With this machine, a darkroom and trays are not necessary because the machine uses a one-step developer. The entire developing and fixing operations are performed from one premixed aerosol spray can. By changing this one-step developer, it is possible to set lines in five different colors (each color in a different can) on paper or film in either positive or negative form. The five colors are red, yellow, blue, brown and black.

This system of setting lines makes it possible to bounce, screen and overlap letters for novel or different effects.

At present, there are over 160 fonts available from 24 to 72 point.

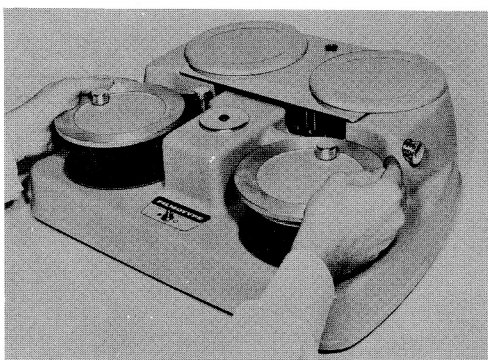
To set a line on the Alphagraph, individual letters on film strips are inserted into the type holder. The letters are held in place magnetically and can be adjusted according to the automatic spacing marks on each letter. Once the line has been set, it is proofread. A strip of Alphagraph paper or film is then placed behind the letters and an automatic timing device is set so there will be perfect exposure for the photographic material being used. After exposure, a one-step wipe-on developer is used to bring out the letters in a matter of seconds. No washing is necessary to make the line set permanent.

The Alphagraph is available from:

Para-tone, Inc.

512 W. Burlington Ave.

LaGrange, Ill.



## FILMOTYPE

This machine is a compact portable desk photo lettering machine that sets display type on photographic paper or film strips. The 2" wide film strip fonts are placed on 2 reels and operate like a typewriter ribbon. To set a line, the operator positions the letter on the film strip to be exposed, pushes a button, and then moves on to the next letter. After the last letter has been exposed a cutter separates the finished proof from the unexposed roll of film or paper. The finished copy is then developed either manually or by an Auto-Processor which will develop, fix and wash the film or paper automatically. On the Filmotype unlimited mixing of different sizes and styles, tints, screened patterns, letterspacing, reverse headings on paper or film negatives can be done.

There are over 1,000 styles and sizes of type from 12 to 144 point. Up to 20 fonts can be stored on one reel in the machine.

The Filmotype can be bought or rented with option to buy on a monthly basis through a plan worked out by the manufacturer. The renter has the option to purchase the machine at any time by paying the difference between all rental fees paid and the total purchase price. Fonts are also available on a rental basis.

**The Filmotype is available from:**

**Filmotype Corp.**

**7500 McCormick Blvd.**

**Skokie, Illinois**

# FOTO-REX

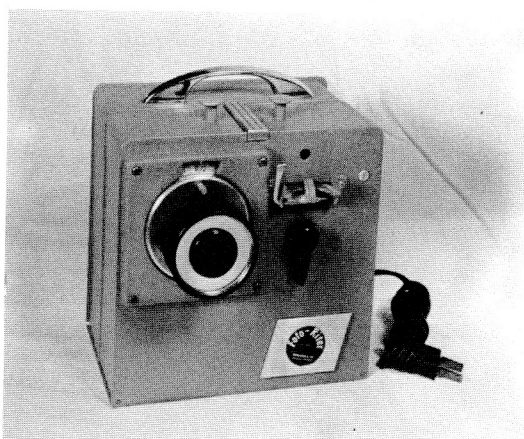
This machine is a compact, portable photo lettering machine, weighing 5 pounds. It is used for setting display lines on 35 mm photographic paper or film.

Foto Rex fonts come alphabetically arranged in loose-leaf pocketed cards. Each Foto Rex character is a separate slide which is inserted into the machine and exposed on 35 mm film or paper. After exposure, the slide is returned to its loose-leaf pocket. Each Foto Rex slide has two numbers on it. One is an identification or style number and size combined. The second is a dialing number which indicates the distance that has to be dialed for normal spacing.

Seven screen patterns are available for special effects. A vertical font is also available.

Two models are presently available. On Model 310, the finished copy is cut off and developed under dimmed lighting conditions. On Model 311, with the automatic developer tank, the finished copy is removed ready to mount in position on your layout. No darkroom is needed.

The Foto Rex is available from:  
Electro-Rex Corp. of America  
387 Park Avenue South  
New York 16, N.Y.



## FOTO-RITER

This machine is a compact, portable photo lettering machine weighing 7 pounds. The Deluxe Model weighs 10-1/3 lbs., and is used for setting display lines on 35 mm photographic paper or film.

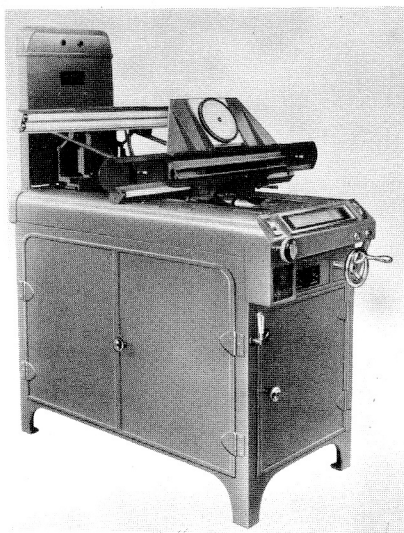
Foto-Riter fonts come alphabetically arranged in loose-leaf pocketed pages, which slip into a three-ring binder. Each Foto-Riter character is a separate slide which is inserted into the machine and exposed on 35 mm paper or film. The paper or film is then accurately spaced by the gear-driven mechanism to the correct amount desired. The film slide is returned to its loose-leaf pocket and the next letter inserted. Each Foto-Riter slide has two numbers on it. One is an identification or style number and size combined. The second is a dialing number which indicates the distance in points that has to be dialed for normal spacing.

Seven screen patterns are available for special effects. A vertical alphabet font is also available.

There are over fifty type styles available in sizes ranging from 8 to 72 point.

Three models are available. Model 300 Foto-Riter, Model 305 Foto-Riter (which is the same as # 300 except that a red light indicator has been installed which flashes when the supply of photo paper has been exhausted) and Model 325 Deluxe Foto-Riter.

**The Foto-Riter is available from:**  
**Foto-Graphic Products Company**  
**311 5th Avenue North**  
**Minneapolis 1, Minn.**



## HADEGO

This machine is designed for setting display lines on photographic film or paper in all sheet sizes up to 11-3/4" x 15-3/4".

Lines set by the Hadeago method are hand set similar to the Ludlow system of slug casting in a special stick designed to hold the mats. The mats are plastic blocks with a white image on a black background. Letter and word spacing are handled in the same manner as Ludlow. The line is then inserted into the machine. The operator then positions the line, selects the point size, the length of the line, and the line spacing required. The line is then exposed and the mats are distributed back into the case and the next line is set. As each line is photographed, the film holder is advanced the amount of space indicated on the line spacing dial plus that shown on the point size scale. The Hadeago case is arranged like the cap section of the California Job Case for both the caps and lower case letters.

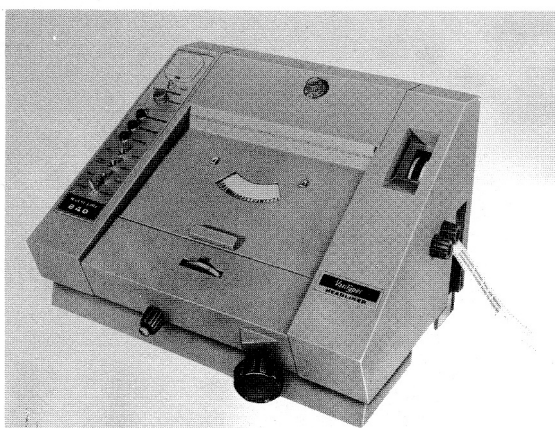
The composition of a complete job up to 11" x 15" can be set and made up ready for camera or platemaking.

The fonts which come in 20 and 48 point sizes are used to set a continuous range of sizes. The 20 point font is used for all sizes 4 to 34 point and the 48 point for all sizes 10 to 82 point. This machine can compose a line to any predetermined size within its point range, any predetermined width within its range and any predetermined size and width within its point range.

The loading and development of the photographic material requires a darkroom.

This machine is made in the Netherlands and marketed in the United States by:

The American Type Founders  
200 Elmora Avenue  
Elizabeth, New Jersey



## HEADLINER

It is a portable photo lettering machine that sets display type on 35 mm strips of photographic paper or film. The Headliner fonts from which the type is set are called TypeMasters. The TypeMasters are discs 13-1/2 inches in diameter. For small sizes of type a full font will be on a disc. For the larger sizes, a complete font may require two discs, the caps on one and the lower case on the other.

To set a line on the Headliner, the disc is rotated until the desired character appears in the window under a wire. A print bar is pressed to expose the character. This procedure is repeated until the complete line is set. After all lines are set, extra paper is fed into the machine until the composed type passes a cut-off knife. The developing lever is raised and held up until a red developing light goes on. While one line is being automatically developed, the operator may set the next line.

The automatic developing within the machine is part of the operation and eliminates the need for a darkroom.

There are three models presently available. The Headliner Model 800 sets single lines of continuous copy. The Model 840 Headliner (Multi-Line) can produce as many as three lines of type on a single strip of 35 mm paper or film. The Model 880 sets type on sheets of photographic material 8-1/2" wide.

There are approximately 900 fonts of type from 10 to 84 point.

Screening, kerning, letterspacing and justifying are possible on the Headliner.

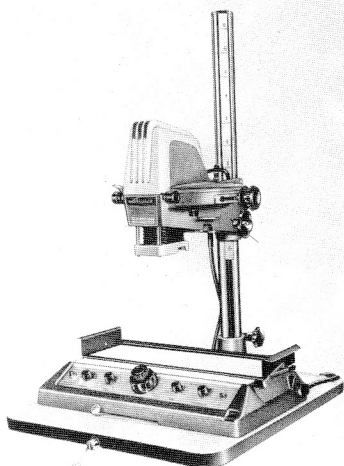
**The Headliner is available from:**

**VariTyper Corp.**

**720 Frelinghuysen Ave.**

**Newark, 07114 New Jersey**





## LETTERPHOT

This machine resembles a photographic enlarger and is used to set type photographically from 10 point up to 11 inches in straight or circular lines, on any sort of photographic material under constant optical control.

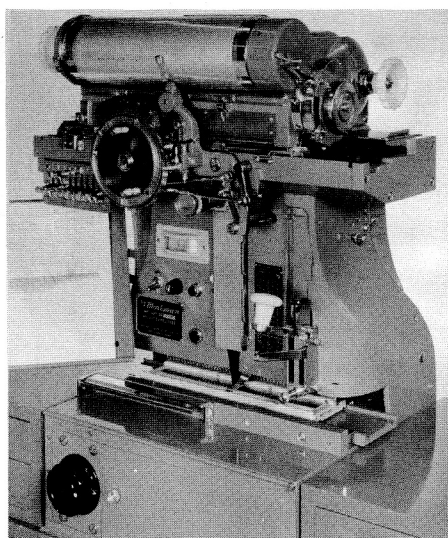
The font, which looks like a phonograph record, is a negative with the characters arranged alphabetically and numerically in three circles. The outer circle contains the capital letters, the middle circle contains the lowercase letters and the inner circle contains the figures, punctuation marks, sorts and symbols. By using a second disc, type can be screened.

Light shining through an individual character on the disc is projected on a fluorescent foil. It is at this time that the operator positions his letter. When the letter is properly positioned, the operator moves the fluorescent foil carrier forward, exposing the photographic material under the foil carrier by an automatic timer. The foil carrier is pushed back into its original position and the procedure repeated until the line is complete. The letters that are exposed to the fluorescent foil will remain visible until the full line is set.

The Letterphot is available from:

Gowolsky & Co.

Leonhardstr. 10, D-80333 München, Germany



# MORISAWA

This machine is mounted on a special wooden cabinet and is used to set type from 5-1/2 to 45 point on its Model MC 101 and from 12 to 60 point on its Model MC 102. This is done from a single font by changing one of the 16 available prefocused lenses on the Model MC 101 and 13 available prefocused lenses on the Model 102. There is a total of 19 different prefocused lenses available for the different sizes on the two models and three distortion lenses from which type can be extended, condensed or slanted from the regular size by 10, 20, or 30 degrees.

A font of type or letter-plate, as it is called, contains the alphabet in capitals and lower case, figures, punctuation marks and some sorts. There are over 60 fonts available as well as special letter-plates made up of 90 ornaments, borders and symbols, figures, fractions and other useful sorts. Special letter-plate fonts can also be made to meet individual needs.

This machine will produce type set as justified lines, by trial setting without exposure to determine necessary spacing for justification, flush left and/or right, or centered lines on 10" x 12" sheets of photographic materials in the form of paper or film positives. The maximum type area on a sheet this size is 59 x 71 picas.

The word and letterspacing on this machine are automatic and the line spacing can be regulated to 1/4 mm (.00975), approximately 3/4 of a point.

To set a line on the Morisawa, the operator loads the magazine with film or paper in a darkroom and installs it on the machine. The desired letter-plate is positioned into the machine and the correct lens for type

size is inserted. After the adjustments for vertical and horizontal spacing are made, the machine is ready for operation. The operator positions the letter-plate for the correct letter and pulls a handle for each exposure. The procedure is repeated until the line is set. To set justified lines, the machine is set for dry running. The length of the completed line will appear on a scale. It is then up to the operator to add or take away space between words in the actual setting to justify the line.

**This machine is made in Japan and marketed in the United States by:**

**Fairchild Graphic Equipment**

**Fairchild Drive**

**Plainview, L.I., New York**



# PHOTO TYPOSITOR

This machine is a compact, Electronically — timed photographic compositor used for setting display lines. It will set up on any office desk or table. The Photo Typositor requires no darkroom and can be operated in daylight. It instantly develops each letter as it is exposed on two inch strips of film or paper. It gives the operator a chance to see every letter as he sets it through a magnified viewing system. This machine can interlock, overlap, bounce, stagger, screen, curve, exaggerate, step up or down, repeat and connect all letters, condense, expand, heighten or shorten (hold one dimension while changing the other) and italicize to the left or to the right. The operator can also enlarge from two times up and reduce to four times down as he sets. There are over 600 lettering and foundry type styles available. 2800 variations in sizes slants and proportions can be made from one basic font.

This machine will function from existing film strips or its own film fonts ranging in size from approximately  $1/8''$  up to  $1\ 7/8''$ .

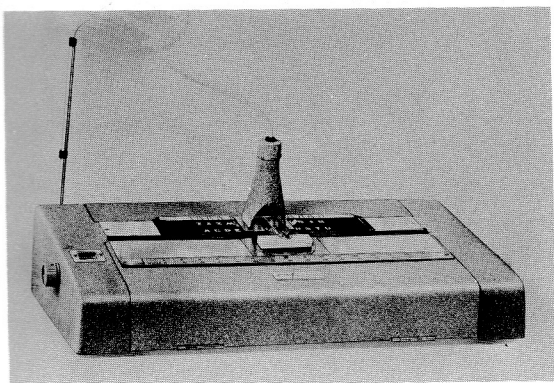
The purchase price includes installation and servicing, instructions, 2 film fonts, italicizing and reproportion lenses, magazine load of 100 feet of photographic paper, sufficient supplies of processing materials, instruction manual and other miscellaneous accessories.

**The Photo Typositor is available from:**

**Photo Typositor, Inc.**

**305 East 46th Street**

**New York 17, New York**



## PROTYPE

This machine is a portable desk top photo lettering machine, weighing 30 pounds, on which it is possible to set blocks of copy on photographic paper or film seventeen inches wide from a continuous roll. It uses a hand-held ultra-violet exposure lamp in a special contoured housing to expose the paper or film, one character at a time. With this machine it is possible to justify, kern, jumble, offset, mix different faces, align at the top or bottom, set horizontally, vertically, diagonally, or stagger in any direction. Line spacing can also be controlled. The ProType does not need a darkroom and the photographic film and paper used in this machine are made to use under ordinary room lighting.

A complete ProFont of type or lettering is contained on three negatives. The character on the film is clear on a black background. The characters are arranged so that the most used letters are on one side of the negative.

To set a ProType letter, the operator positions the negative over the photographic film or paper and flashes the exposure lamp over the letter to be set and then moves the ProFont to the next letter to be exposed.

There are over 25,000 ProFonts from 6 to 90 point.

The purchase price includes a ProType machine, a set of four fonts, all necessary letter and line spacing devices, a supply of sensitized paper, processing chemicals and plastic trays an instruction book and type style and lettering book.

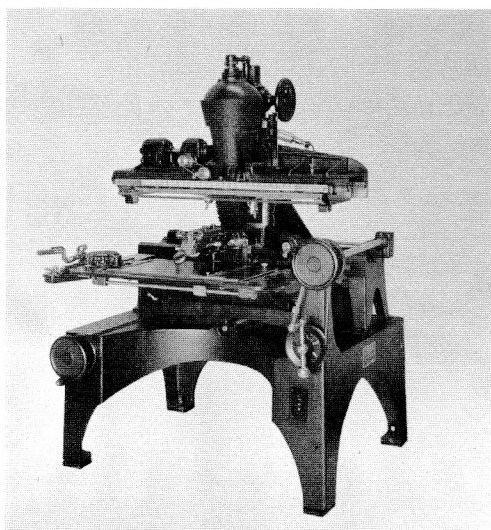
**The ProType is manufactured by:**

**ProType**

**Division of Electrographic Corp.**

**305 East 45th Street**

**New York 17, N.Y.**



## RUTHERFORD

This machine uses a glass master alphabet plate, with transparent letters, which fits into the machine. It slides back and forth semi-automatically. One letter after another is brought into focus over a small precision camera. As each letter comes into position, it is photographed instantaneously on film, a dry plate or sensitized paper. This takes place in daylight where the operator controls the machine and places each letter in position according to his layout. After the film, dry plate or sensitized paper is exposed, it is developed. The machine will take film or paper up to twenty-two by twenty inches and a dry plate up to twelve by twenty inches.

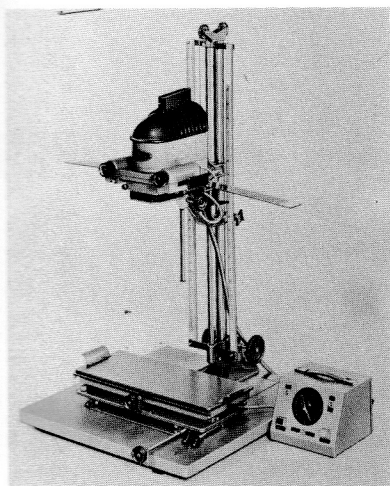
This machine will enlarge, reduce, expand, condense, reportion (hold one dimension while changing the other) italicize left or right, justify, letterspace, join letters, give backgrounds, repeat designs and borders, stipple, screen, overlap, shade and heavy letters.

There are over 250 different styles of master alphabets with a range from practically zero to 192 point. This range is obtained from three different sizes of alphabets. Any individual alphabet can be reduced two-thirds, or increased by one-half.

The purchase price of this machine includes a projection layout device which is a separate piece of equipment that is used for layout work of a special nature. With each master alphabet plate that is ordered, a layout plate is included, which is a smaller reproduction of the alphabet. This layout plate fits into the layout device so all the characters can be projected at one time.

The shipping weight of this machine and the layout device is approximately 3500 pounds.

**The Rutherford Machinery Co.**  
401 Central Avenue  
East Rutherford, New Jersey



## STARLETTOGRAPH

This machine was developed from a photographic enlarger. Stepless settings from 1 to 10 mm (1/25" to 4") are possible. Type sizes down to 1.1 mm (approximately 3 points) can be set with a supplementary control tool (tube with a magnifier). Large sizes up to 200 mm (8") can be composed by pivoting the projection head. The basic platform carries a cross-slide which is movable and turnable in all directions. This makes it possible to obtain many variations of one type design. Through the use of a round-setting disc, another supplementary tool, circular and semi-circular composition can be set.

The type font is a film negative protected between two layers of plastic and is 75 cm long by 5 cm wide (29 1/2" x 2"). The font carries the complete face with all letters and signs.

To set a line on this machine, each character is selected by moving the type font in its carrier to the left or right. Each letter is positioned and checked by projecting a red light on a special photo-composing paper or transparent foil. After the visual check, the first letter is exposed with a white light. A few seconds after the exposure, the letter appears permanently visible in black. The next letter is moved into position and the procedure repeated.

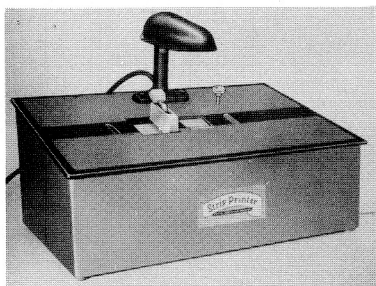
This method produces, within a few seconds, a fully developed black and permanently visible proof on special paper. No additional developing is necessary on this special material.

**The Starlettograph is available from:**

**Film-Klischee G.M.B.H.**

**8 Thierschstrasse 15**

**Munich 22, Germany**



## STRIPPRINTER

This machine is a light weight portable desk top photo lettering machine used to produce display type on 35 mm photographic paper or film (with or without the perforations). The type fonts are film strips that are inserted into the machine. This machine has no gears, motors, chains, or belts and it is used to print individual letters, whole words, borders or logotypes. Spacing, letterspacing and kerning can also be done. The StripPrinter does not need a darkroom and can be operated under subdued room lighting.

To set a line on the StripPrinter, each character is brought into position by lining up a mark to the left of the character on the film font and to the right of the window. The transport is locked and the film font and photographic material are moved to the left until the mark on the right side of the character and the mark on the right of the window are in alignment. The character is exposed by pressing the printing lever. When the transport is moved, the paper and the film font are advanced together. At the same time the shutter is opened to expose the letter in the window. When the printing lever is pressed, the paper and the film font are brought into close contact with the glass in the window. When close contact is made, a light goes on to make the exposure. The shutter is held in place until the printing lever is released. The transport is then returned to its normal position and the next character properly placed in the window.

There are over 1500 different types and sizes available from 6 to 96 point.

The purchase price includes the machine with ten type fonts (which the buyer selects), a 100 foot roll of 35 mm photo paper, six textured screens, a developing kit, developing and fixing solutions, and instructions.

**The StripPrinter is available from:**

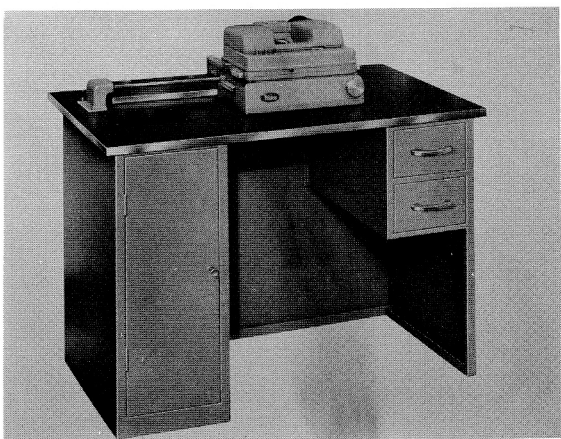
**StripPrinter, Inc.**

**21 N.W. 41st Street**

**P.O. Box 18-895**

**Oklahoma City, Okla.**





## TYPRO

This machine is a portable desk top photo lettering machine, weighing 19 pounds, used for setting headings on strips of paper or film. It operates in normal light and does not require a darkroom. There is a choice between a portable darkroom (hand dip method) or a cabinet model with a fully automatic developer and drier. This machine will set type in positive or negative form directly on paper or film. The machine can justify, center, compose more than one line on a strip, screen letters, screen backgrounds, interlace letters or words, bounce letters, print overlays, produce drop shadows, print whole words or logotypes from film strips.

In order to set a line, the operator turns a selector dial to the desired character which appears in a magnified viewer, enlarged and illuminated, with composing targets to show the best spacing. To expose a character, a lever is raised to bring the sensitized material in contact with the font during exposure. The procedure is followed until the line is complete.

There are 1800 faces, ranging in size from 6 to 144 point. Up to 15 type fonts can be stored on one reel in the machine.

The Typro is available from:

Fiden, Inc.

San Leandro, Calif.

# PHOTO TYPESETTING

Phototypesetting machines are used where high speed production of typesetting is needed. Some of these machines are adaptations of the hot metal machine made by the same manufacturer, while others are entirely new. Where the hot metal machine has been adapted, the manufacturer has replaced the metal pot with a camera and a roll of film or paper. All of these machines, except the Intertype Fotosetter, use a typewriter keyboard. Some manufacturers use electronic devices and transistors in their machines and some produce a perforated tape which is fed into another machine that is part of their system. Where photo lettering machines are used to set display lines and headings, phototypesetting machines are used to set the body or text matter in a job. The two methods are often used in conjunction with one another.

The purchase price of these machines vary from \$15,000 to \$160,000. Some include a selection of type fonts and other materials. Because the price of this group of machines is generally high, many manufacturers have set up lease or rental plans with an option on buying.



# ALPHATYPE

This machine is a completely transistorized photo typesetting system in three parts. It utilizes a standard electric typewriter as a keyboard from which is set 6 to 18 point type from individual fonts up to 66 picas long on photographic film or paper.

1. *The Keyboard* produces a typewritten hard copy and is electrically connected to a recorder unit which transmits a ten channel binary signal to a magnetic tape. These signals identify each character and its width as it is being composed. At the end of each line, the carriage return automatically transmits the necessary justification information. If a typing mistake is made, a kill key will erase the line. After the job has been recorded on the magnetic tape, the reel is fed into the exposure unit. The desired font is inserted into the exposure unit and the proper line and paragraph leading is selected. Sensitized paper or film is then mounted on the exposure unit carrier. The exposure unit reads the magnetic tape and photographically composes it. After the job is completed, a buzzer sounds. The sensitized paper or film is then removed and processed.
2. *The Recorder* is small enough (20" high on a 16" base) and light in weight (35 pounds) to be placed on any standard desk. The recorder unit selector buttons provide fingertip control of automatic justification, automatic centering, 168 characters on the keyboard (two complete alphabets), 7 pi character positions, automatic quad-out key, automatic quad-centering control, error key for dropping wrong lines, tabular control for figure column work, test control for determining measures in unit lengths.
3. *The Exposure Unit* weighs approximately 100 pounds and is 2 feet wide, 3 feet long and 14 inches high. The rear of the exposure unit may be built into a darkroom wall so the photographic material

(film or paper) can be handled under proper lighting conditions. The exposure unit can accommodate a maximum justified line of 66 picas 11-1/2" deep. The exposure unit operates automatically at a 40% faster speed than the recording rate. The exposure unit can handle leading between lines and paragraphs in 1/2 points up to 40 points. It can control the exposure for paper or film positives and negatives, has a standby switch which permits set-up changes (mixing styles and sizes), interchangeably set width unit discs from 6 to 18 points, signals when machine requires reloading on film or paper and has other special change signals.

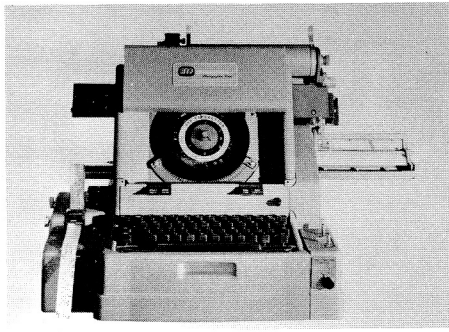
*The Alphatype font* is a plastic negative mounted in a 4" x 7" aluminum frame containing two complete alphabets. Each alphabet has 84 characters available on the recorder keyboard. Fonts are available in different combinations (roman and italic, medium and bold, etc.). There is a separate font for each size. Since all fonts have a common alignment, they can easily be aligned and mixed regardless of size.

**The Alphatype is available from:**

**Filmotype Corporation**

**7500 McCormick Blvd.**

**Skokie, Ill.**



# ATF

The ATF Typesetter is a phototypesetting system utilizing two units, a keyboard and a photographic unit for setting justified lines in the form of text or tabular composition on film or paper. From a coded tape and a changeable negative type disc, this machine photographs characters 5 to 14 points on photographic film or paper up to 7-1/2 inches long.

1. *The Keyboard unit* produces a typewritten hard copy and a coded tape from a standard electric typewriter keyboard. The coded tape is fed into the photographic unit and justification is completely automatic. In the event of typing error, the operator can delete an entire line by the "Line Delete" key or any single character through the "Code Delete" key. Through a "Stop Code" key, the operator can code an automatic stop of the photographic unit. The keyboard unit can also be used to duplicate, automatically, any perforated tape. There is a choice of 3 standard keyboard layouts. The key board unit weighs 90 pounds and is 17-3/4" x 20-3/4" x 9-1/2" high.

The tape punched on the keyboard unit carries all the information recorded by the operator.

2. *The Photographic Unit* is completely automatic. It also has a manual keyboard for direct composition of unjustified lines. A film carriage holds up to 40 feet of film or 25 feet of photographic paper 3-3/4", 5-3/4" or 7-3/4" widths. Leading between lines can be controlled on a line feed dial in half point increments up to 16 points at the photographic unit (this figure includes the size of the type). Leading can be changed at anytime without repunching the tape. If additional space between lines is needed, it can be punched into the tape right on the perforating unit or added manually by turning the film feed dial on the photographic unit.

The speed of the photographic unit is 400 characters per minute. The photographic unit weighs 122 pounds and is 21-3/4" x 25-1/2" x 16-1/2" high.

To prepare the photographic unit to meet the requirements of a job requires the inserting of a type disc, the inserting of the right set-width gear for the selected point size, and dialing the proper line-spacing.

*The Type Face Disc* weighs less than two ounces and normally consists of two fonts, usually a roman with a bold or italic (168 characters). The bold or italic will print red on the typewriter proof. A separate disc is needed for each type size. Each disc is about the size of a 45 rpm record and can be changed as easily as changing a record on a phonograph. Special type discs can be made to order to produce different styles and sizes of type with one operation.

The size and style of the type to be set is determined by the type disc used on the photographic unit and the insertion of a corresponding change gear for the selected point size.

**The ATF Typesetter is available from:**  
**American Type Founders**  
**200 Elmora Avenue**  
**Elizabeth, N. J.**



# Electronic Photographic Typesetting System

The Electronic Photographic System consists of two basic units.

1. *The Keyboard Console* Produces an 8 level perforated tape programmed with all the necessary function codes to automatically operate the photographic print-out unit from a standard electric typewriter with 44 keys. Through the typewriter and three shift positions, the operator controls the selection of 120 different character positions. The console also produces a "hard copy" that is used for reference by the operator.

From this keyboard, type can be set from 5 to 72 points using three different type size discs. The type size discs available 10, 15 and 20 point sizes. The 10 point disc allows for the setting of 5 to 36 points. The 15 point size disc sets from 7.5 to 54 points, and the 20 point disc sets from 10 to 72 points. Nineteen different type sizes can be set from any single disc. Each disc has a capacity of 240 characters and is easily changed.

Two space-code discs are generally used at the same time in the keyboard console. The discs signal the computer how much space each character occupies in a given style of type as the operator strikes each key.

Keyboard overlays for any given disc arrangement are provided to guide and identify special characters.

Type can be set in 1/4 pica increments from zero to 51 picas.

A row of auxiliary keys control the following functions:

1. *Reject*: This permits the operator to kill a line or portion of a line.
2. *Non-Just*: For fixed word spacing.
3. *Skip Tape*: Advance paper tape.
4. *Monitor*: Stops the unit so the monitor can insert pi characters, change discs or follow specific instruction on the tape.

5. *Cut Film*: To cut off the photographic material in the photo unit.
6. *Leader Insert*: Automatically inserts leaders or other repetitive material.
7. *Select Non-space*: Permits character exposure without moving the film for such purposes as underscoring.
8. *Kern*: For kerning of characters.
9. *Correct*: Deletes errors in punched tape.
10. *Reset*: Restores auxiliary keys to normal operating positions.
11. *Space Controls*: Six keys provide the spacing requirements for all composition needs.
12. *Justification Control*: Automatically justifies without limitations. Spacing between lines can be inserted in 1/4 point increments from zero to 63-3/4 points.

## 2. The Photographic Print-out Unit

The 8 level perforated tape, punched on the keyboard console is fed into the photographic print-out unit and exposes up to 20 characters per second. This speed is the equivalent to 22 newspaper lines per minute or 22,000 ems per hour for book or similar text composition.

The photographic unit is capable of accepting tape from four or more perforators at full efficiency.

The type face discs rotates at a speed of 2,400 rpm. Two discs are used simultaneously which makes 480 characters available for automatic selection and exposure. A disc can be changed in 45 seconds.

For the coded information punched into the tape, it will select the proper type face disc, the proper characters on the disc and any one of the 19 point sizes for the lens system.

Besides exposing each character in its proper sequence with the correct letterspacing and word spacing for justification, tabulation, quadding and any other type positioning functions, it will also advance the photographic material for its proper line spacing.

When pi characters are necessary they can be inserted by a monitor.

A universal film carriage will accommodate 100 foot rolls of high speed photographic film or paper in 18, 30, 42 and 51 pica widths. A dual sprocket feed and pre-perforated film or paper assures accurate line spacing. An indicator shows the amount of material consumed. The photographic print-out unit will automatically stop when the roll of photographic material is depleted.

In addition to a line counter which records the number of lines photographed it can also cut the photographic material by a signal punched into the tape.

The design of the photographic print-out allows for the removal of exposed photographic material while it is operating. Exposed material



can be removed from the unit in a dark booth or it may be directly connected to a conventional darkroom.

The photographic print-out unit measures 3'1" x 7'4" and weighs approximately 1,500 pounds.

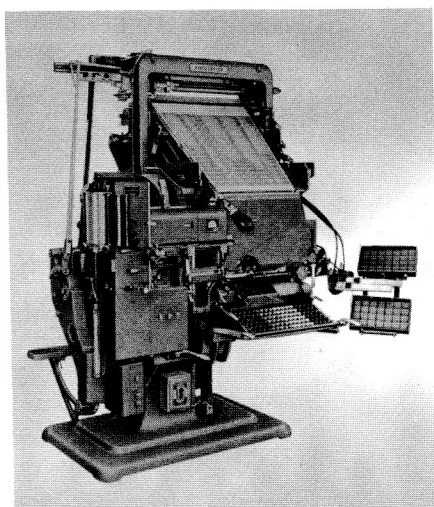
The keyboard console is a 3' x 7' contoured designed desk and weighs approximately 900 pounds.

**The Electronic Photographic Typesetting System is available from:**

**Intertype Company**

**220 Furman Street**

**Brooklyn, New York 11201**



## FOTSETTER

The operation of this machine is similar to that of the hot metal line casting machine made by the Intertype Company. It uses the principle of the circulating matrix. The metal pot has been replaced by a camera that photographs one letter at a time. The machine is divided into four general sections.

1. *The Keyboard* has 114 keys (24 more than the hot metal line casting machine), which includes caps, lower case, small caps, figures and points. From the keyboard, the operator can mix faces from any two magazines at a speed of 480 characters per minute.

Justification, which is normally handled at the keyboard on the hot metal machine, is now done by a justification mechanism. This mechanism automatically measures a line that has been assembled for the amount of space to be distributed between words and individual characters.

2. *Magazine of Mats.* The Fotsetter is built to hold four Visilite transparent magazines which contain 117 channels (27 more than the hot metal line casting magazine). There are three channels more than the number of keys on the keyboard to allow for the lower case "e" and spaces.

The Fotsetter mat, called a Fotomat, has a transparent character on a black background imbedded in its side protected by trans

parent covers. Fotosetter faces are available in 6, 8, 12 and 18 point (ad figures only) sizes.

3. *The Photographic Unit* has a twin-turret camera with a 14 lens capacity. This enables the Fotosetter to produce type photographically on either film or paper from 3 to 72 point in measures up to 51 picas from 4 fonts. There are 18 lenses available making it possible to set each basic font in any of 18 sizes by using the appropriate lens.

4. *Distribution.* By the principle of the circulating matrix, the Fotomats are automatically returned to their proper channel ready to be used again.

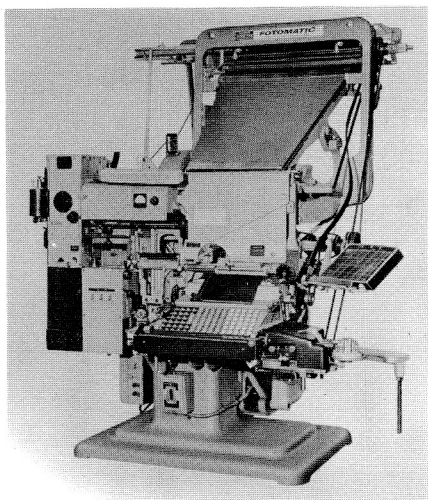
*Corrections.* Register holes are punched at both edges of the film or paper while type is being composed. These holes allow for hairline register when making corrections.

The Fotosetter is available from:

InterType Company

222 Furman Street

Brooklyn 1, N. Y.



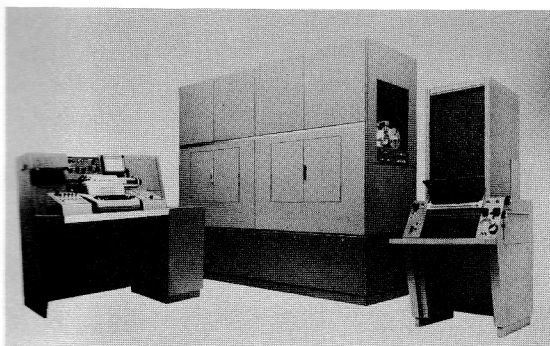
## FOTOMATIC

The Fotomatic is similar to that of the hot metal line-casting machine and the Fotosetter made by the Intertype Company. It uses the principle of the circulating matrix. Where the Fotosetter is basically a keyboard operated machine, the Fotomatic can be operated manually from the keyboard or by wire service or locally perforated six channel tapes. Where the Fotosetter is built to hold four 117 channel magazines, the Fotomatic can hold only one 90 channel magazine.

A new two-letter 8 point Fotomat has been designed for exclusive use on the Fotomatic. Each two-letter Fotofont provides a complete roman and bold type face. Regular 6, 8, 12, and 18 point one-letter Fotomats can also be used in the Fotomatic. From a 6 point Fotomat, type 3 to 18 point can be produced. From the 8 point one or two letter Fotomat, type 4 to 24 point can be produced. From the 12 point Fotomat, type 6 to 36 point can be produced. From the 18 point Fotomat (ad figures only) type from 9 to 54 point can be produced. There are sixteen different interchangeable lenses available.

The Fotomatic is equipped with an 8 lens camera as compared to the 14 lenses on the Fotosetter. The camera will expose 600 characters per minute of text composition or 300 characters of display composition. In lines, it will set 8.2 lines per minute of 8 point type 12 picas long. It is capable of setting lines up to 42 picas long.

**The Fotomatic is available from:**  
**Intertype Company**  
**360 Furman Street**  
**Brooklyn 1, N. Y.**



# LINOFILM

The Linofilm is not a machine but a phototypesetting system made up of three machines. It consists of a keyboard unit, a photographic unit, and a composer.

**1. The Keyboard Unit** is a console which consists of:

- a. a standard typewriter which produces a typewritten hard copy.
- b. a justifying unit which is a mechanical justifying computer and indicator.
- c. three auxiliary control panels which have spacing keys in twelfths of an em, font selector keys, a quad left key, an end of line and justify key, and a line erase key.
- d. a perforator which punches a paper tape. This tape records all the keyed information and is fed into the photographic unit. A tape can be held and used again if necessary.

Eighteen grid fonts each with 88 characters are instantly available from the keyboard covering one of the following point size ranges, 6 to 12, 12 to 24, 18 to 36 and 36 to 54 points. Leading in one point increments can be dialed. Centering, quading (left or right) and justification are a push button operation. The operator can also control letterspacing by adding or reducing space between characters. All type faces and sizes align at the bottom. The maximum length of any line is 42 picas.

**2. The Photographic Unit** which is entirely automatic consists of:

- a. a reader unit which decodes the information punched into the tape by the keyboard.
- b. an optical system which consists of:
  - 1. a light source.
  - 2. a grid turret which houses the 18 grid fonts (the equivalent of more than 72 magazines of hot metal matrices). The grid

turret is controlled automatically by the tape which chooses the font as well as the individual character. The grid fonts are glass plates mounted in stainless steel frames.

3. a shutter system which permits the photographing of a single character on the grid fonts.
4. a multi projection lens system which projects the selected character to the photographic points.
5. an optical turret assembly which produces the required point size changes.
6. the film magazine holder. It will hold up to 50 feet of film or paper in rolls of 4, 6 or 8 inches.

Flashing lights signal when a job has been completed or when more paper or film is needed.

3. *The Composer* is used for job makeup. A negative produced on the photographic unit or made from a hot metal reproduction proof is placed into the Composer. On this part of the system, the operator can produce a full newspaper-size page (18" x 24") with all components in its proper size and position. He works from a tracing paper layout which is placed over the Composer screen and visually places every line in its proper position leaving space for halftone or line art. On the Composer, any type size up to 36 point can be reduced two-thirds or enlarged six times its original size, making it possible to get all type sizes up to 216 point. It is also possible to set lines at angles up to 90 degrees.

### *Linofilm Converter*

This machine is a link between a computer and the Linofilm phototypesetting machine. This machine will convert the magnetic tapes produced on data processing computers to a 15-level paper tape for use on the Linofilm.

The Linofilm Converter is housed in two cabinet units. A tape drive and reader unit for magnetic tapes produced on computers from the input section of the Converter. A high speed paper tape punch that produces a 15-level tape ready to use on the Linofilm Photographic Unit. The Converter also houses a temporary storage unit and a solid state electronic logic unit. This provides central control and rearranges the format of the magnetic tape. The speed of the Converter averages 40 Linofilm codes per second. This will fully load three to four Linofilm Photographic Units.

*The Linofilm and the Converter are available from:*

**Mergenthaler Linotype Co.**

**29 Ryerson Street**

**Brooklyn 5, N. Y.**

# MEGATYPE

This machine is both a phototypesetting and a composing system combined in a single unit four by five feet in size and desk high. From an electric typewriter keyboard it is capable of producing justified lines in 54 different sizes of type between 6 to 200 point. The operator can also place type in its proper position, according to the original layout on standard sheets of film or paper from 8" x 10" up to 18" x 24". The exposing and composing of each line takes place simultaneously and eliminates job makeup after the photographic material has been processed in the darkroom.

Any justification normally done by the hand compositor such as word spacing, letterspacing, or backspacing can be done on this machine.

An electronic encoder, two memory storage systems, the font grids, the exposing, spacing and justifying mechanisms are enclosed in a cabinet.

1. *The Keyboard* uses an electric typewriter that controls 88 characters. It also has a line return key and a line advance key that will automatically return the film and advance it the amount of leading set by the operator.

*The Supplemental Keyboard* is used to insert 38 special characters such as small caps, ligatures, superior figures, symbols, ornaments, etc.

This part of the machine also controls the spacing, justification, leading, the choice of type face and size selection, and the shifting

controls for the composer.

If the operator is in doubt as to the length and spacing of a line, he can dry run it without exposing it. He can then change the justification, position controls, or even change the size to make it fit the layout. The dry-run line does not have to be reset because the memory storage units will not clear automatically unless a line has been exposed.

2. *The Electronic Encoder* records each character, its width, and the face of type selected in one of the two memory storage units as a line is set.
3. *Memory Storage Units* store and decode the information before it is exposed. There are two complete memory units, each with integral decoders. This makes it possible for the operator to set one line or one memory unit while the previous line is being exposed in position by the other memory unit.

If the operator should make a typing mistake, the line can be killed and the memory unit cleared.

4. *The Font Grids* contain 126 characters on each font grid. 88 characters are controlled by the electric typewriter and the remaining 38 by the supplemental keyboard.

A master font carrier holds four grid fonts that are mounted on a thick plastic base, equipped for a snap-in and snap-out action for changing fonts.

Each font grid has its own matching width control printed circuit card which inserts into the electronic encoder by pulling one of four levers. This automatically encodes the memory storage unit from the type font selected.

It is possible to mix in a single line light, bold, condensed or extended type.

5. *The Composer* is mounted vertically behind the typewriter keyboard and above the visual justifying scales. On the composer, the operator can set any one of 54 sizes between 6 and 200 point in position according to the layout.

The 54 sizes available are in 1 point increments 6 to 20 point. In 2 point increments 22 point to 44 point. In 4 point increments 48



point to 84 point. In 6 point increments 90 point to 150 point. In 8 point increments 160 point to 200 point.

**The Megatype is available from:**

**Don McCray**

**527 Park Avenue**

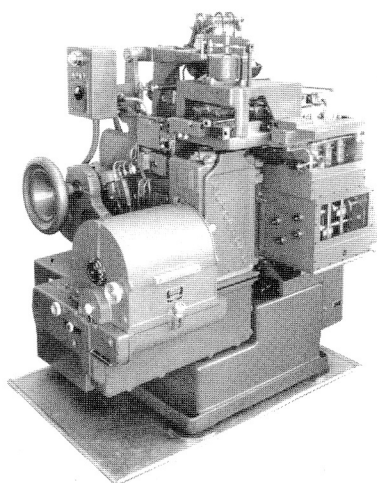
**Wilmette, Illinois**

**or**

**Korthe Engineering Co.**

**9353 Seymour Avenue**

**Schiller Park, Illinois**



## MONOPHOTO

The Monophoto Filmsetter is a completely automated machine that is very similar in concept to the Monotype Composition Caster (one of the Monotype Company's hot metal type casting machines). With a few minor changes, the keyboard for the Monophoto is the same as that used for the Composition Caster. On both machines, the perforated paper ribbon produced from the keyboard controls the positioning of the 16 x 17 matrix-case (272 characters).

The basic difference between the two machines is that the metal pot, pump and mold of the Composition Caster has been replaced with a photographic unit. Where the Composition Caster produced individual pieces of type from molten metal, the Monophoto produces type on photographic film or paper.

*The Keyboard.* To set type for the Monophoto, an operator must first perforate or program at the keyboard a 31 channel tape with all the codes necessary to set the job. This tape, with the programmed codes passes over air vents on the filmsetter and activates the machine for typesetting. From the keyboard, the operator can control 272 positions in a 16 x 17 Unit Shift matrix-case.

In addition to the regular keys found on the keyboard it is also equipped with a character delete and continuous character delete key, a 1-unit space key, a character kill key, a double exposure key which plays a very important part in the setting of mathematical work, a quadder key and a low alignment key which also plays a very important part in mathematical work. By using the double exposure and low alignment keys it is possible to build up fractions in mathematical work from superior figures.

*Film Matrices.* The 16 x 17 Unit Shift matrix-case with 272 individual film matrices of approximately 8 point type is arranged in a

matrix-case similar to the hot-metal matrices. In most cases, one set of matrices can be used to set type from 8 to 24 point, while a second set is needed to set 6 and 7 point type. Individual matrices can be changed to insert special characters, fractions, sorts and signs to meet specific requirements of the job.

*Spacing.* The principle of the 18-unit spacing found on other Mono-type machines has also been retained on this machine, but the wedges have been replaced by racks which engage with pinions. The amount of rotation conveyed to the pinion, working in step with the unit rows of the matrix-case is converted into the width requirements of the size and set of the particular character being reproduced. This conversion is effected by a unit selector and differential gears, resulting in the moving of the mirror-bar of the optical system the correct distance for each character.

Leading can be controlled between lines in half-point increments by making an adjustment on the drum on which the photographic film is mounted.

*The Optical System.* This part of the machine consists of a projection lamp that provides a beam of light that is equally distributed by a condenser over the selected matrix. In order to save space, and to obtain the different degrees of magnification, the beam of light carrying the image is "folded-up" by a pair of prisms. The light then passes through a projection lens to a pair of mirrors at a 45 degree angle and reflects them onto the photographic film. The mirrors move in unison the correct amount for each character exposed. By using a set of focusing bars and a control lever, the positions of the projection lens and the prisms can be altered to produce type images on photographic materials from 6 to 24 point in proper focus, and fractional point sizes of desired.

For the setting of type 6 to 12 point, the projection lens comes after the prisims. For larger sizes up to 24 point, the projection lens comes before the prisms.

The film in the drum does not move while a line is being set, but the drum will move automatically after a line has been set to provide the necessary space and leading between lines.

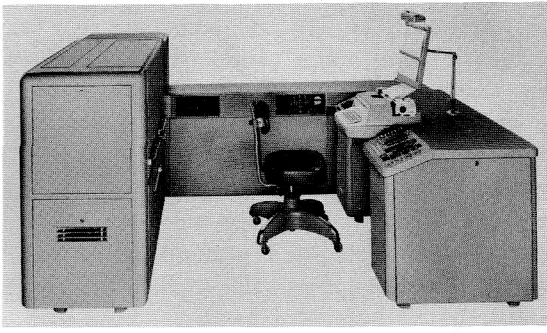
The film is taped to a drum in a darkroom with masking or an adhesive tape. The photographic film or paper can be any size up to 60 picas wide, on film 11" by 24" long.

Eight different film or paper projections viewed with the emulsion side up can be obtained directly from this machine. They are:

1. Reverse — reading film positives
2. Reverse — reading film negatives
3. Reverse — reading paper positives
4. Reverse — reading paper negatives
5. Direct — reading film positives
6. Direct — reading film negatives
7. Direct — reading paper positives
8. Direct — reading paper negatives

*Make-up and Correction System.* A special make-up and correction system is used that employs a transparent transfer sheet, a translucent grid sheet, a transparent plasticized sheet, and a light table with back lighting. The developed film from the Monophoto is cut apart in sections and picked up with the transparent transfer sheet and positioned on the transparent plasticized sheet, which is positioned over the grid sheet according to the layout, in absolute perfect alignment.

**The Monophoto Filmsetter is available from:**  
**Lanston Monotype Company**  
**G Street Below Erie Avenue**  
**P.O. Box 4768**  
**Philadelphia 34, Pa.**



# PHOTON

The Photon 200 Admaster is an electro-mechanical, phototypesetting machine. Type in 16 different styles can be set in 12 point sizes, ranging from 5 point to 72 point. Style and size mixing can be done on lines up to 54 picas. The Photon looks like a metal office desk with a built-in electric typewriter. The system also contains a "memory" control and a photographic section.

1. The Keyboard is a special electric typewriter with an added row of keys for composing functions such as spacing, leading, insert leaders and quading. Adjacent to the keyboard on both sides are button panels used to select type faces, sizes and other composing requirements. Automatic justification is a control feature found on the typewriter keyboard. A "Just" key is used to send each line typed to the photo section when the compositor is satisfied with typescript produced as he types.
2. The "Memory" control, which stores each line as it is typed, automatically calculates character width values and the inter-character-interword spacing for proper justification. This unit frees the operator from calculations.
3. The Photographic Section contains an 8 inch, glass matrix disc. Sixteen, 90 character alphabets are arranged in concentric rows in negative form. A series of 12 lenses can be positioned to produce any of the 16 type faces in 5 through 72 point type either on film or paper. 192 fonts of type can be produced from the single disc.

The matrix disc rotates continuously at 10 revolutions per second. A burst of stroboscopic light, "freezes" the character to be photographed. The beam of light, passing through the lens system projects the character image to the photo-sensitive material. The Photon is capable of unlimited mixing of type styles and sizes from the matrix disc, whether on the same line or from line to line, without interfering with justification or base alignment of type.

The Photon Company in Wilmington, Massachusetts, produces a series of phototypesetters. The 513 Displaymaster is a tape operated unit accepting six-level tape codes produced on a general or special purpose computer. Unjustified-unhyphenated copy is cut on a perforating keyboard and then processed in the computer according to a master program. The computer reperforges a new justified-hyphenated tape for application to the 513. The Displaymaster is used primarily to produce advertising display type in copy block format.

The 540 Tapemaster consists of a perforating keyboard, a control unit and a photographic section. Since the keyboard is not connected to the other elements, the advantage of using a 540 is that a number of keyboards can be used with one control unit and a single photographic section.

The 560 Tapemaster, operated by computerized tape, is used as a printout device with general and special purpose computers to produce quality typography. The computer produced, eight level coded tape operates the 560 photographic section. The 560 product is used for bookwork and other fine text requirements.

The Photon 900 Computer Phototypesetter is a new departure in phototypesetting. Used exclusively as a high speed printout device for computer typography, the 900 produces photographic type on film or paper at a speed of 500 characters per second. More commonly known as "ZIP", the system contains a control unit and a photographic unit. ZIP applications are indexes, dictionaries, newspapers, magazines and books.

**The Photon is available from:**  
**Photon, Incorporated**  
**58 Charles Street**  
**Cambridge 41, Mass.**

# LETTERS FOR PASTE-UP

Individual letters and words, as cold type, set into a display line, are being widely used to prepare copy for the camera. Hand lettered and type alphabets, as well as signs, symbols, rules, borders, sorts and logotypes, have been prepared on paper, card, acetate, plastic and transfer letters. They are available from the manufacturers (or his representative) and art supply stores.

Most of these alphabets are printed on acetate with black ink, with a guide line under each character. This guide line is used to properly position each letter. They have their own self-adhering backings protected by a special backing sheet making it easy to assemble. Some of these alphabets are also available in color. Most manufacturers of these sheets will make special sheets to order, from artwork provided by the purchaser.

To set a line with these acetate letters, a light blue guide line is drawn on the material from which the line will be reproduced. The light blue line will not reproduce when it is photographed. Each letter that is needed, with its guide line, is cut out with a stylus or razor blade. Care should be taken not to cut the backing sheet. The letter with its guide line is registered over the light blue guide line. Each letter is burnished down lightly to hold it in place. After the line has been set, the letters are burnished down. The guide line on each letter is not burnished, it is cut away.



## AD-LETTER

The Ad-Letter is a 10" x 14" transparent acetate sheet with an adhesive backing protected by a special backing sheet. Sheets with hand lettered alphabets, type, arrows, symbols, screens, and patterns are printed on the underside of a glossy or matte finish acetate to make them smearproof. These sheets can be used for all reproduction processes. There are approximately 250 different alphabets available in sizes 18-120 point. Not all sizes are available in all type styles. Each alphabet sheet includes figures and punctuation marks.

**Ad-Letter is available from:**

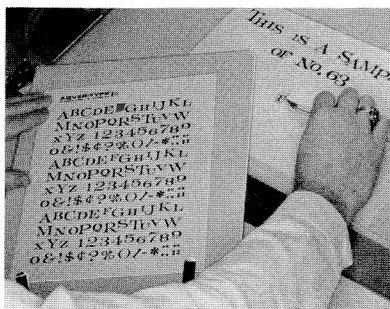
**Ad-Letter**

**7380 Beverly Boulevard**

**Los Angeles 36, Calif.**

**or art supply stores.**





## ADVER-TYPE

The Adver-Type is a 9" x 12" matte acetate sheet with a self-adhering backing protected by a special backing sheet.

There are over 40 fonts ranging in size from 12 to 60 point. Not all sizes are available in all type styles.

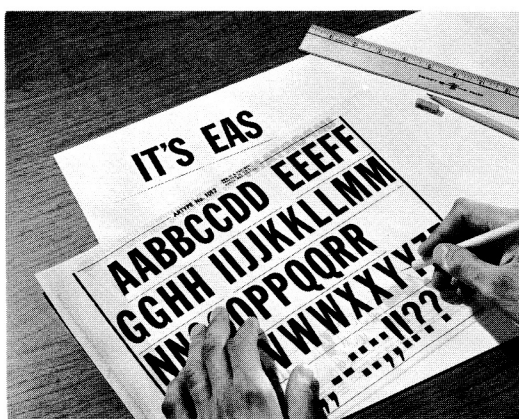
We also custom make any form or art work logo etc. on 9 x 12 sheets \$12.00 plate charge sheets sell for .75 a sheet. A stock item is .50 a sheet.

Adver-Type is available from:

Adver-Type

100 Lock Street

Washua, New Hampshire



## ARTYPE

Artype is a 10" x 14" transparent acetate sheet with a self-adhering backing protected by a special backing sheet. Sheets with alphabets, numbers, arrows, symbols, borders, screens and shading mediums are printed on the underside of the acetate to make them smearproof. There are approximately 350 different alphabet sheets available in sizes 6 to 120 point. Not all sizes are available in all type styles. These sheets are printed in black on clear acetate. Reverse type sheets are also available.

Artype not only makes alphabet sheets with a horizontal guide line under each character but a short vertical guide line on each side of the character slightly above the horizontal line. These are called "Auto-space" sheets. They help the typesetter get equal space between all letters.

The name of your local Artype dealer is available from:

**Artype Incorporated**  
**345 East Terra Cotta Avenue**  
**Crystal Lake, Illinois 60014**

and

**Trans-Art Incorporated**  
**96 Main Street**  
**Dobbs Ferry, New York 10522**

A A A A A A A A A A A A B B B C C C C C D D D D D  
 D E E E E E E E E E E F F F F F G G G G G H H H  
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## CELLO-TAK

The Cello-Tak is a 10" x 13" transparent acetate sheet with a self-adhering backing protected by a special backing sheet.

Cello-Tak alphabet sheets are available in three kinds.

1. Four sheets complete a word set of hand lettered alphabets. These sheets contain complete words and combinations of letters that can be used to make other words. There are over 50 four sheet sets.

2. Single sheets with individual letters of hand lettering styles to match the four sheet sets.

3. Single sheet type sheets in over 200 faces in sizes 18 to 144 point. Not all sizes are available in all type styles.

Sheets with arrows, symbols, screens, patterns, and color are also available.

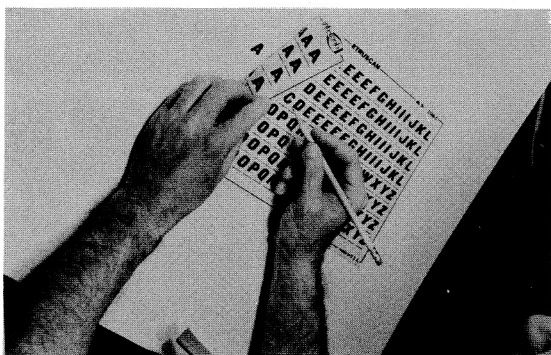
Cello-Tak also makes a heat resistant transfer type sheet 10" x 13" in alphabets, sorts and symbols.

There are approximately 300 different alphabet styles available in sizes 18 to 188 pt. in opaque black, red and white letters.

To set a line with Cello-Tak transfer sheets, draw a light blue pencil line on the material from which the line will be reproduced. The protective backing sheet is removed and the character is placed in its proper position. The character is carefully burnished and peeled away from the transfer sheet. This procedure is repeated for each character until the entire line is set. After the line has been set, the backing sheet is used to give the line a final burnishing. The type sheet is then put back on the backing sheet.

Cello-Tak is available from:

Cello-Tak Company  
 25 Alabama Avenue  
 Wood Park, N. Y.



## DECA-DRY

Deca-Dry is a dry transfer letter that can be applied to many dry surfaces, both smooth and rough. They come in 13-1/4" x 16-1/2" sheets in black, red, blue and white. Many popular type faces, lettering styles and sizes are available.

Custom orders for logotypes, trade marks and symbols are also available.

A Special heat-resistant adhesive and cohesive ink prevents the letters from moving, cracking or bubbling under hot reproduction, fixatives or lacquers. These sheets are made with a wax-free adhesive behind the letters, not the entire sheet. Each full sheet is perforated so the user can work with one half of a sheet at a time.

Deca-Dry letters will transfer from the alphabet sheet to many dry surfaces by rubbing lightly with a medium pencil, burnishing tool or a ball point pen.

**Deca-Dry is available from:**

**Chart-Pak, Inc.**

**1 River Street**

**Leeds, Massachusetts**

# COMPOSE-A-FORM

The Compose-A-Form is a do-it-yourself kit made up of ready-cut reproduction proofs that are pasted down on a master layout sheet. The purpose of this kit is to eliminate the typesetting and ruling costs of business forms.

There are three different kits available.

*Kit #79* contains over 1500 reproduction proofs with enough pieces to make up any business form from a 3" x 5" to a 9" x 14".

*Kit #149* contains over 2500 reproduction proofs with enough pieces to make up any business form from a 3" x 5" to a 17" x 22".

The Compose-A-Form kits are available from:

National Business Aids, Inc.

121 Fifth Avenue

New York 17, N. Y.

## Craftint® LETTER-PRESS



# CRAF-TYPE

Remove from backing sheet. Position letter; use finger to press in contact with work surface. Hold carrier sheet firmly and burnish entire character with a ball point pen. Carefully lift carrier sheet. Transferred character can be made tougher by reburnishing with use of a cover sheet.

Craf-Type is an 8" x 12" matte-finish acetate sheet with a self-adhering backing in 35 colors that is protected by a special backing sheet. Sheets with alphabets, symbols, designs, screens and patterns are available. There are over 300 fonts available in sizes 8 to 120 point. Reverse type sheets are also available. Not all sizes are available in all styles. Color sheets are either transparent, semi-transparent or opaque.

Standard Craf-Type sheets are made with a wax backing that is self-adhering. A special heat resistant adhesive sheet is also available for blueprint or ozalid use.

Craf-Type is available from:

The Craftint Manufacturing Company  
18501 Euclid Avenue  
Cleveland 12, Ohio



# FORMATT

Formatt is a 10" x 14" heat resist matte-finish acetate sheet with a self-adhering backing protected by a special backing sheet. These sheets with alphabets, numerals, sorts, symbols, arrows, ornaments, rules, borders are printed on the underside of the sheet to make them wearproof.

There are about 350 fonts ranging in size from 6 to 216 point. Not all sizes are available in all type styles.

Formatt is available from:  
 Graphic Products Corporation  
 10 West Campbell Street  
 P.O. Box 94  
 Arlington Heights, Illinois

**AAAABBBCCDDEEE**  
**EEFFGGHHIIJJKK**  
**LLMMNNNN OOO**  
**OPPQRRRRSSSTT**  
**TUUUVVWWXXYYZ**  
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**()...,,,--'""'!!?;:**

**FOTO-FONTS**

Foto-Fonts are complete fonts of a similar nature assembled in book form 8" x 10-1/2". The individual characters are cut out and assembled by a unique scotch tape method. Each font comes complete with characters, figures and punctuation marks.

*Foto-Fonts No. 1.* This book contains twenty-one Futura style fonts, 18 to 72 point, in medium, bold, extra bold and condensed. Not all sizes are available in all type styles. 32 pages.

*Foto-Fonts No. 2.* This book contains eighteen fonts 18 to 72 point. It contains script and hand lettered styles, shadow outline and Old English faces. Not all sizes are available in all type faces. 32 pages.

*Foto-Fonts No. 3.* This book contains nineteen fonts 18 to 72 point, Rustic, thin outline Gothic, Old Fashioned and other popular display faces plus one page of Blockout designs. 32 pages.

*Foto-Fonts No. 4.* This book contains fourteen fonts of Antique, Rustic, Ornate and open face types in sizes 18 to 36 point. Not all sizes are available in all type faces. 16 pages.

**Foto-Fonts are available from:**

**A. A. Archbold, Publisher**  
**Box 332**  
**Burbank, Calif. 91503**





## FOTOTYPE

Opaque Fototype is printed black-on-white on precision-cut card stock and assembled into pads of a particular character.

Rules, borders, symbols, ornaments, sorts and piece fractions are also available.

To set a line of Fototype, the individual letters are removed from the pad at the perforations and assembled, face downward, in a special aluminum composing stick fifteen inches long. After a line has been completely assembled, Double-Coated Paste-Up Tape is pressed down across the back of the type, and it is removed from the stick. The excess tape and card are trimmed away leaving the line ready for paste-up. For sizes over 96 point, a special large composing stick is used.

Fototype transparencies which are black letters printed on a clear acetate with a throw-away cardboard backing are also available. Transparencies are also set in the Fototype Composing Stick just as the standard opaque letters. When the line is set, a piece of clear acetate tape is placed over the letters. The line is removed from the stick and

cut to its proper size at which time the cardboard backing is removed. The line is then ready for mounting.

Fototypes are ordered as a complete font (6,000 characters and spaces) on a hardboard tray or as Fototype-ettes (a tryout package). Refill pads can be ordered for any character.

**Fototype is available from:**

**Fototype Incorporated**

**1414 Roscoe Street**

**Chicago, Illinois 60657**

# HALLCRAFT

Hallcraft die cut letters are used for poster and display work. These letters come with or without an adhesive backing on a heavy showcard. They range in size from 3/4" to 4-1/2" and are used for posters and display work.

The surface of these letters have a slight sheen and are water resistant. Letters that become soiled or smeared from handling can be wiped clean with a damp cloth.

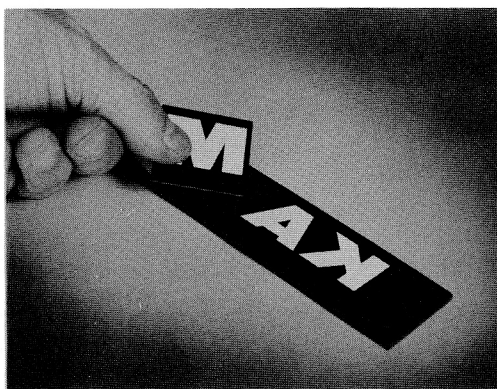
**Hallcraft letters are available from:**

**Arthur Brown & Bro., Inc.**

**2 West 46th Street**

**New York 36, N. Y.**

**or art supply stores.**



## KAMERATYPE

Kamerateype characters are 96 point white reverse letters on a black plastic rectangle 1/16" thick. Each character fits into a special Kamerateype composing stick.

Kamerateype letters are set the same way as hand type in a stick. After a line is set, it is photographed to the size desired and the line distributed. The paper or film is then processed to a positive image.

There are over 15 Kamerateype fonts which include caps, lower case, numerals and punctuation.

**Kamerateype is available from:**

**Kinder Products**

**502 Delaware Avenue**

**Wilmington 1, Delaware**



## LETRASET INSTANT LETTERING

Letraset Instant Lettering are dry transfer letters that are used for setting display lines. They come in 10" x 15" master alphabet sheets and can be used on, paper, card, glass, metal, film or practically any surface, even wood. Sheets come in black, white, red, yellow or blue from 8 point up to a full 3" face. There are approximately 300 alphabet sheets plus special sheets with signs, symbols and borders. Not all sizes are available in all type styles.

The letters are held on the lettering sheet with a plastic base. The underside of the sheet is coated with a special adhesive. The protective backing sheet has a special coating which prevents the letters from sticking to it.

To set a line using Letraset Instant Lettering, the edge of the protective backing paper is used as a guide. Drawn guide lines are not necessary. The letter to be transferred is placed in position and burnished down. After the entire letter has been carefully burnished, the type sheet is peeled away. This procedure is repeated until the entire line is set. After the line has been set, the backing sheet is placed over the line and given a final burnishing. The type sheet is then put back on the backing sheet.

Letraset Instant Lettering is an English export available from:

Arthur Brown & Bro., Inc.

2 West 46th Street

New York 36, N. Y.

# LETTER-ON

Letter-On die-cut letters are used for poster and display work. These letters come with an adhesive backing and range in size from 1" to 7-3/4".

**Letter-On Letters are available from:**  
**The Letter-On Company**  
**9605 Bulls Run Parkway**  
**Bethesda, Md.**

# MONSEN

Monsen map type Trans-Adhesive Impressions are transparent self-adhesive sheets used for making maps. Map type comes in words, symbols, and signs commonly used in making maps. The type is printed on both sides of the acetate in perfect register. Over 750 type styles are available in 5 to 120 point. Not all sizes are available in all type styles. These sheets are not prepared in advance but are custom made for the customer on a matte or glossy finish acetate.

They come in three different forms:

1. *A Heat Resistant Transparent Adhesive.* This is used when the paste-up will be reproduced by a process where heat is used.
2. *A White Backed Transparent Adhesive.* This is used to cover up or black out some other word or marking. A white opaque backing is applied to the back of the sheet after it has been printed.
3. *Regular Transparent Adhesive.* This is used when the paste-up will be photographed.

These sheets are available from:

Monsen Typographers

22 East Illinois St.

Chicago 11, Illinois



**PASCO**

Pasco is a method by which pre-set headlines and body copy are metallized through the use of Pasco-Tallic pressure sensitive metallic tape and are layed-out megnetically on a permanently magnatized surface. Lines can be set in any position such as circles, arcs, tiled, staggered or bounced without any problems.

After the copy is arranged on the board, it is camera ready and can be inserted into a vacuum or pressure type camera copy holder.

Metallized characters will be available in snapout kits. The type can be re-used and housed in font cabinets. A magnetic pick up tool is used for easy removal.

Pasco Magni Copy-Set Board and Products are available from:

**Pasco Letters and the Pasco-Magni Copy-Set Board are available from:  
Pasco, Inc.**

**Post Office Box 935**

**Lake Charles, Louisiana**



# PLANOTYPE

Planotype are re-usable plastic letters with a self-adhesive on a 15" x 12" aluminum sheet. These letters can be put back on the aluminum sheet and reused as long as they do not lose their tackiness. Planotype letters are available as opaque or transparent letters. Opaque letters come in three colors and transparent letters come in four colors. Planotype comes in Gothic and Futura letters and range in size from 14 to 130 point. There are several fonts on each aluminum sheet.

To set a line of Planotype, the individual letters are removed from the aluminum sheet with a stylus and placed face up on the back of the Planotype layout sheet. The letters will not stick to this sheet. The letters are then picked up from this sheet with a plastic grid. As each letter is picked up, it is positioned and spaced on the grid. The assembled line on the grid is placed in position on the material it is to stay on and the grid is pressed against the material. The adhesive on the back of each letter will hold it in position. Remove the grid sheet.

Planotype is available from:

Planotype Corporation

351 Fifth Ave.

New York 17, N. Y.



## PRESTO PAPER TYPE

Presto Paper Type consists of individual tabs of light-weight white paper one and a half inches high. Each tab has a character printed on the left side in black which will align with other characters alongside it. There are 130 type faces ranging in size from 8 to 72 point. Reverse type letters are also available. Not all sizes are available in all type sizes.

To set a line with Presto Paper Type, a piece of scotch tape is placed on the edge of the back of a ruler. Each letter is set by placing the tab of the scotch tape and lining up the bottom against the ruler. The tabs are overlapped so the correct amount of space can be obtained between letters and words. After the line has been set, the scotch tape is removed from the back of the ruler. The excess scotch tape sticking out beyond the tabs is removed and the line is ready for paste-up.

Fonts are sold by the stick (a compact wooden type holder). The style and size of the type limit the number of characters to the stick. A stick can hold up to 62 different characters in pads of 50. Most fonts include additional pads of letters frequently used.

**Presto Paper Type is available from:**

**Presto Process Co.**

**183 St. Paul Street**

**Rochester 4, New York**



PAT. 3,013,917

U.S. PAT. OFF.



PAT. 3,013,917

AAAABBCCCD	AAAABBCCCD
DEEEEEFFGGH	DEEEEEFFGGH
HHHHIJJKKLLL	HHHHIJJKKLLL
MMNNNNNOO	MMNNNNNOO
OOPPPRRRR	OOPPPRRRR
SSSSTTTTUUV	SSSSTTTTUUV
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111223344556	111223344556
6778899000	6778899000

# PRESTYPE

Prestype is an eraser-proof dry transfer letter, with a protective backing sheet, that is used for setting display lines. They come in 12" x 16" master alphabet sheets, symbols and sorts that will adhere to any surface. Sheets come in black, red, white, blue and gold. There are approximately 400 different sheets ranging in size from 12 point up to 20 line. Not all sizes are available in all type styles.

To set a line with Prestype dry transfer letters, a guide line is drawn. The backing sheet is removed and the letter to be transferred is put in position on the guide line. The letter is carefully burnished with a wood paddle that is supplied or a pencil or ball point. After burnishing, the transfer sheet is carefully peeled away making sure that the entire letter has been transferred to the new surface. As soon as a complete word or line has been transferred, the backing sheet is placed over it and given a final burnishing to make it eraser-proof.

Prestype is available from:

Prestype, Inc.

135 West 21st Street

New York 11, N. Y.

# QUICK-TYPE

Quik-Type is a pressure-sensitive, die-cut and re-usable letter, with an adhesive on the back of each letter, that is printed black on card stock. Each letter is a reproduction proof, pre-cut and self-aligned at its base and to the letter. These letters come on a 10" x 13" sheet that will hold from two to eight complete fonts of caps, lower case and figures, depending on the point size.

There are 250 styles and sizes of type with special sorts up to 4 inches.

To set a line with Quik-Type, the letters are placed in position by lining up the base of each letter to a blue line and burnishing them down. When a line is no longer needed, the letters can be distributed into a special case and used again at some date.

Also available is a 20" x 24" layout copy board, a compact type cabinet that will hold eight mahogany type cases, a wax applicator for waxing proofs or copy and a cutter box with an 18" low heat fluorescent lamp under a frosted plastic top. This makes it easy to trim as close to the copy as the layout requires.

**Quik-Type is available from:**

**Cold Comp. Co.**

**2015 34th So.**

**Seattle 44, Washington**

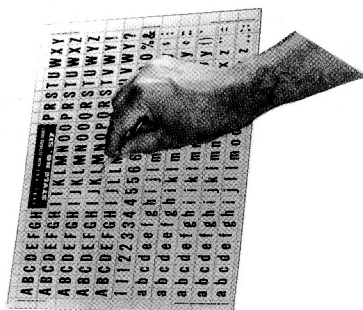


# QUILLO

Quillo is a 14" x 10" transparent acetate sheet with a self-adhereing backing protected by a special backing sheet with permanent releasing qualities. These sheets with alphabets, numerals, sorts and symbols are printed on the underside of the sheet to make them smearproof.

There are about 100 fonts ranging in size from 12 to 84 point. Not all sizes are available in all type styles.

Quillo is available from:  
 Advertising Aids Company  
 424 Washington Ave. No.  
 Minneapolis, Minn.



# REDI-KUT

Redi-Kut is a 10" x 12" transparent acetate sheet printed on Kleen-Stik with a protective backing sheet. The letters are printed on top of the acetate. Each letter is pre-cut and has its own adhesive backing. Sheets with alphabets, borders and sorts are available. There are approximately 75 different styles available in sizes 14 to 72 point. Not all sizes are available in all type styles.

**Redi-Kut is available from:**  
**Redi-Kut Head Lettering Company**  
**357 Westerie Street**  
**Chicago 10, Ill.**

# T & T GUMMED PAPER LETTERS

T & T gummed paper letters (caps only), figures and symbols are printed on gummed paper and die cut to their exact shape. There are 39 fonts available in black, white and colors. They come in alphabet fonts or packages of 10 or 100 individual characters from 1/8" to 2-3/4".

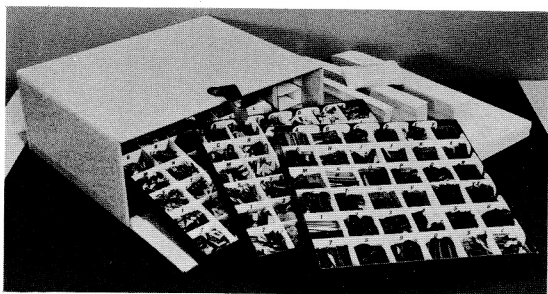
To set a line of T & T Gummed Paper Letters, a light guide line is drawn or a straight edge is used as a guide. The gummed letters are moistened, placed in position, and lightly pressed down. When the entire line is assembled, it is firmly pressed down with a blotter or a sheet of paper.

**T & T Gummed Paper Letters are available from:**

**Tablet & Ticket Co.**

**1021 West Adams Street**

**Chicago 7, Ill.**



## WEBWAY

The Webway system consists of red and black die-cut card capital letters and numerals on gummed stock. These letters and numerals are primarily used for sign making. The letters come in four sizes,  $\frac{3}{4}$ ",  $1\frac{1}{8}$ ", 2" and  $2\frac{3}{4}$ ". The numerals also come in four sizes,  $\frac{3}{4}$ ",  $1\frac{1}{8}$ ", 2" and 3".

Three special assortment packages are also available. One is made up to 711 pieces that cover 27 separate subjects for every season and holiday of the year. A second assortment package is made up of 1,000 symbols which cover 55 separate subjects. A third assortment package is made up of 269 specially designed complete words (sale, special, look, only, for) and familiar abbreviations (lb, st, th, ok)  $5\frac{1}{2}$ " to 7" long. These special assortment packages come in red, black, orange and green.

A special slant style two inches high is also available.

The letters and numerals are stored in a three tray cabinet.

To set a line by the Webway system, each gummed letter is placed on a Line-a-time gummed mounting strip. The end of these gummed strips are cut off and the line mounted on a Guide-Line card. A graph printed on the strips and cards help space out and align the letters and words.

**Webway die-cut letters are available from:**

**The Holes-Webway Company**

**St. Cloud, Minnesota**



# CLIP BOOKS

There are not only letters for paste-up, but also artwork.

Clip Books of Line Art. Thirty-six 5" x 8" "Clip Books of Line Art" on different subjects lithographed on Kromekote.

Volk Corporation  
1401 North Main Street  
Pleasantville, N. J.

DeLuxe Clip Books 1 and 2  
Offset Scrapbooks 1 to 9 inclusive  
The Book of Borders  
The Book of Panels  
The Book of Borders and Decoration  
A.A. Archbold, Publisher  
Box 332  
Burbank, Calif. 91505

## Clip Tips

Mead Papers  
118 West First Street  
Dayton 2, Ohio

Picto-Pak. Printed on 8-1/2" x 11" white ledger paper or matte finish transparent plastic.

Chart-Pak, Inc.  
Leeds, Mass.

Rolls of acetate tapes in solid colors, patterns, symbols, borders and rules are also available.

Such materials are available from:  
Chart-Pak, Inc.  
Leeds, Mass.

# TYPEWRITER COMPOSITION

The typewriter today, in addition to its use in the home and the business office, is also being used to set type directly on an offset printing plate and to prepare copy for the camera on reproduction papers. This now makes the typewriter a typesetting machine from which books, newspapers, advertising material, commercial work and many other kinds of printing matter can be produced.

The typewriter has opened a new field of operation to the publisher as well as the commercial printer. It has made it possible for people to open an offset printing plant with a relatively small investment.

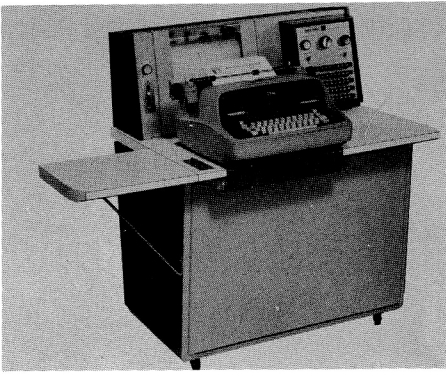
The use of the typewriter as a composing machine has made the typewriter manufacturers makers of business machines as well as printing equipment.

This part of the study is limited to the electric machines in the following categories:

1. those with special type faces.
2. those that can change type faces.
3. those with proportional spaced characters that can justify lines with a second typing.
4. those that can punch a tape that can be fed into another machine to produce hot metal or cold type composition.
5. special typewriters.
6. the typewriter attachments that can be used on most typewriters to guide the typist for retyping justified lines.
7. other typewriter attachments.

All the machines covered in this part of the resource unit have a typewriter keyboard or use a perforated tape which came from a typewriter keyboard.

Because there is an overlapping between some of these categories, all these machines and attachments have been arranged alphabetically.



## AUTO-TYPIST

The Auto-Typist can be attached to any electric typewriter and is used where repetitive typing is needed. Precomposed, numbered letters, or paragraphs are perforated on a memory roll which can store up to 250 lines of typed copy. By flipping a switch and pushing the desired buttons, the Auto-Typist automatically picks out the copy wanted in the proper order and types it. This machine is capable of producing over 100 single page letters in a regular working day.

The Auto-Typist is available from:

American Automatic Typewriter Company  
2323 North Pulaski Road  
Chicago 39, Illinois



## **FLEXOWRITER\* "PRESIDENT"**

The Flexowriter\* "President" is a tape-operated automatic writing machine. It has proportional spaced characters and is used where repetitive typing jobs are needed. It can automatically type one hundred words or 572 codes per minute. The Flexowriter produces 5, 6, or 8 channel punched tape and a typewritten copy which is used as a reader's proof. It can also be used to punch IBM cards. When the original typing has been completed, a stop code is punched into the tape to stop the machine. There are 14 type faces with proportional spacing and 8 types for regular spacing.

When the Flexowriter is used with the Motorized Tap Reader or the Selectadata,\* an Automatic Tape Reader with data selection, names, addresses and paragraphs selected for different letters can be inserted automatically by using two tapes. A repetitive letter used as part of an advertising campaign can be handled this way. The tape in the Flexowriter reader types the date and spaces down to the inside address. At this point, a code punched into the tape switches automatically to the second tape. The second tape sets the name, address and salutation. A code punched into the second tape switches the operation back to the first tape which sets the remainder of the letter.

There are six basic Flexowriter models including systems models SPS and SPD, widely used in Business data processing system units that are available in 12, 16 or 20 inch carriage lengths. There is a choice of many type faces as well as foreign language keyboards.

The Flexowriter is available from:  
Friden, Inc.  
San Leandro, Calif.

\*A Trademark of Friden, Inc.



## **HERMES "AMBASSADOR"**

The Hermes Ambassador is a 46 key electric typewriter with proportional spacing. It has a controlled touch impression that controls the impression of all characters regardless of touch.

There are two type styles available for proportional spacing and twelve other styles for their other model machines.

Over 80 foreign language keyboards are available plus a wide variety of mathematical and scientific symbols.

Some of the other features of this machine are the electric repeater for all keys including the space bar and back spacer, automatic electric cut-off approximately 7 minutes after typing stops, an optional 8 tab key decimal tabulator, interchangeable carriages of 13", 15", 18", and 24", half line spacing, and an end of page indicator.

**Hermes typewriters are available from:**

**Paillard Incorporated**

**100 Sixth Avenue**

**New York 13, N. Y.**

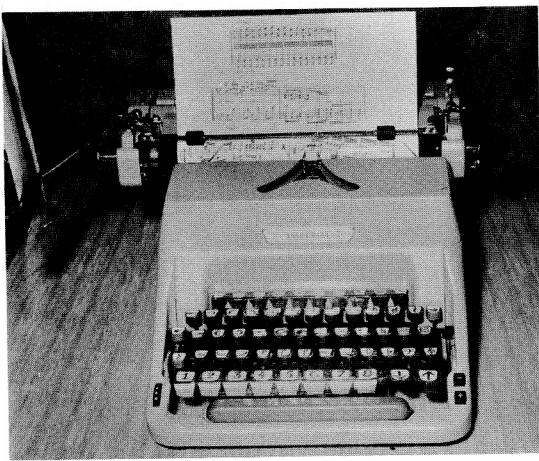


## IBM "EXECUTIVE"

The IBM Executive is an 86 character electric typewriter with proportional spacing for each character. It is also equipped with 2 and 3 unit spacing bars. This, with a one unit back space, makes it possible to set justified lines. A first typing will show the length of each line and a second typing with space added or subtracted between the words will justify them. An expand lever adds one extra unit of space automatically after each character. This lever can be used to letterspace words and headings.

This machine also has control of the impression. This makes it possible to get the right amount of impression on all typing work. A film ribbon is generally used in the "Executive" Typewriter for this application.

The Executive has 17 type styles in sizes 8 to 14 point available. Changeable type bars also make it possible to get special characters and sorts for specialized work.



## MUSICAL TYPEWRITER

The trade and local press have carried news items about a London, England, woman who designed and built a prototype of a typewriter that is capable of reproducing musical characters also words and number. The keyboard consists of notes instead of characters. A row of 8 keys at the bottom of the keyboard controls the shifting of the type basket so notes can be placed in their proper position on the music staff. It is reported that a skilled typist can set about 30 notes per minute.

All inquiries to:  
Miss Lily Pavey  
29 Laing House,  
Councillor Street  
London, S.E. 5



# PRINTASIGN

⑦ The Printasign is a display typewriter that uses printing ink for making signs. 1,

The Printasign Universal Type-Case is adaptable to all standard type faces or to any special type face from 12 to 144 point. Foreign alphabets and engineering symbols can also be handled as easy as English.

② Each letter in the Printasign is automatically and hydraulically spaced according to width and weight. Simple controls allow for changing inter-letter spacing. 2

This machine is widely used in department stores for making counter display signs, and by government agencies and industry for making presentations.

The Printasign may be purchased or rented.

**The Printasign is available from:**  
**Reynolds Printasign Company**  
**9830 San Fernando Road**  
**Pacoima, California**





# ROYAL

The Royal electric typewriter is an 86 character keyboard having a controlled touch impression. It can also be obtained as an 88 or 92 character keyboard. Technical as well as foreign language keyboards are also available. There are 74 type styles available for these machines.

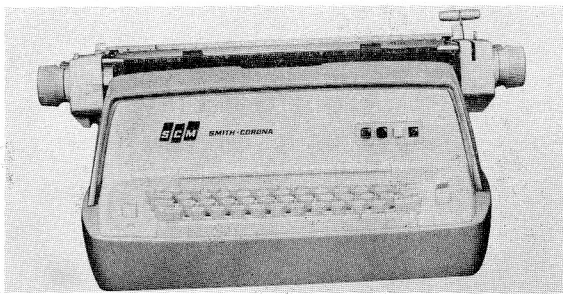
Some of the other features of this machine are the automatic underscore and hyphen control, the horizontal half space, the automatic horizontal spacer, automatic vertical spacer, automatic carriage return, automatic back spacing, a removable cylinder, a line meter which indicates the number of lines remaining at the end of a page.

**The Royal is available from:**

**Royal McBee Corporation**

**850 Third Avenue**

**New York, 10022 N.Y.**



# SMITH- CORONA

This company makes five different electric typewriters.

1. *The Smith-Corona 250* is an 88 character compact office typewriter equipped with a 12" carriage that is available in a wide range of type styles (pica and elite) and keyboards. It features an automatic carriage return, a repeat space bar, hyphen, underline, dot crossout keys and backspace keys.

2. *The Smith-Corona New 400 Deluxe Electric* is claimed to be the "world's most automatic office typewriter." It has a push-button ribbon control which selects the carbon or fabric ribbon. It has an automatic paper rejector; push-button impression control; push-button word control corrects errors instantly; and provides normal, half and expanded space automatically. It also has a controlled touch impression.

3. *The Smith-Corona New 400 Statistical Electric* is similar to the 400 Deluxe Electric except that it has an additional 10 keys for decimal tabulating that saves time where large amounts of figure work is used. It also has a controlled touch impression.

4. *The Smith-Corona Electra 120* will accept paper up to 12-1/8" wide with a choice of pica or elite type in a wide selection of executive and special purpose type styles. Foreign language keyboards are also available. This is an 88 character machine equipped with an automatic repeat space bar, underline, hyphen, and dot as standard equipment. When specified, any or all keys can be made to repeat. It also has a controlled touch impression.

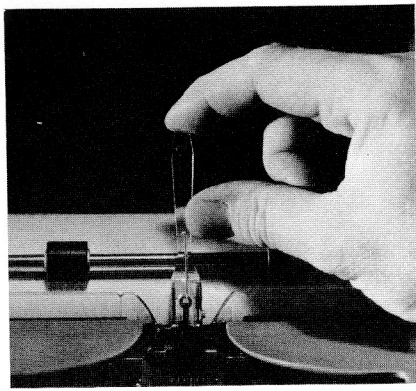
5. *The Smith-Corona Coronet* is an 88 character portable electric typewriter that has a controlled touch impression. It will automatically repeat forward spacing.

Smith-Corona typewriters are available from:

Smith-Corona Marchant, Inc.

410 Park Ave.

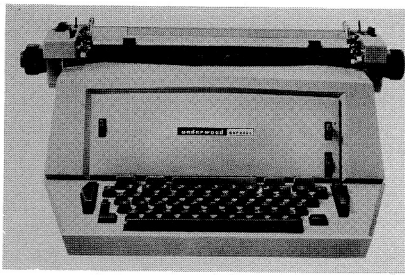
New York 22, N. Y.



## TYPIT

This is a method of inserting special symbols into typewritten copy that requires no alteration to the keyboard. A modified type bar guide replaces the present type bar guide to hold and locate the Typit. A Typit is inserted into its holder. The rising type bar from a struck key forces a small slide into the platen, printing the special character. The special character is removed and normal typing is resumed.

The Typit is available from:  
Mechanical Enterprises  
3127 Colvin Street  
Alexandria, Virginia



## UNDERWOOD

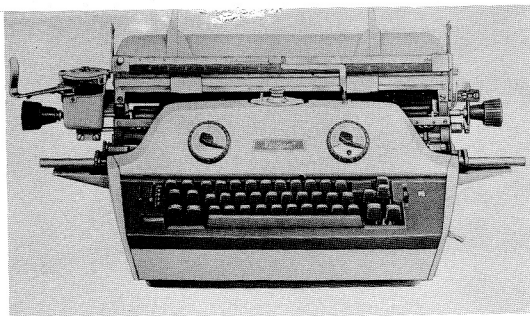
This company makes three different electric typewriters. They are:

1. *The Underwood Raphael* is an 88 character machine with proportional spacing for each character. Justified lines can be set with a second typing. Six different type faces are available for this machine. It also has an impression control dial which makes it possible to adjust the impression to meet typing requirements. Some other features of this machine are the centering scale, repeat keys for backspacing, forward spacing and underscoring, a reverse tabulator key and an interchangeable platen. A 13" and 16" carriage is available.

2. *The Underwood Forum* differs from the Raphael in that the Forum uses standard typewriter spacing and it can be obtained with a 10-key key-set decimal tabulator. A 13", 16", 21" and 27" carriage is available with this model. There are thirty-two type styles available in this model.

3. *The Underwood Scriptor* is a regular electric typewriter designed for general purpose typing. It is available with a 10-key key-set decimal tabulator and can be obtained with a 13", 16", 21" and 27" carriage. It also has the reverse tabulator and the title centering scale. There are 12 type styles available in this model.

**Underwood typewriters are available from:**  
**Olivetti Underwood Corporation**  
**One Park Ave.**  
**New York 16, N. Y.**



## **VARITYPER MODEL 610**

This machine is designed to produce proportional spaced type composition from a typewriter like keyboard. The operator can instantly change type faces and the spacing between words to justify lines of type. A second typing is necessary to get automatically justified lines. The space between lines is also changeable in half point increments. The impression can be regulated to meet the needs of the job. There are 16" and 20" open end carriages.

The VariTyper type font which is made from a chrome steel alloy has three rows of thirty characters on each plate. The ninety characters include caps, lower case, punctuation marks, ligatures, fractions and commonly used symbols. Special characters for rule and leader work such as different thickness rules, parallel rules, leaders, dots and hyphens are part of the type font. Two fonts are placed in the machine at the same time. There are over 1,000 fonts available from 6 to 12 point. Foreign language fonts are also available.

Other VariTyper models are:

1. The VariTyper 270 which is designed for use where proportional spacing is not required.
2. The VariTyper Model 350 Lettering Machine is designed for drafting work.
3. The VariTyper Model 116 is designed for duplicating work.
4. The VariTyper Model 519 is designed for setting business forms.

**The VariTyper Composing Machines are available from:**

**VariTyper Corporation**

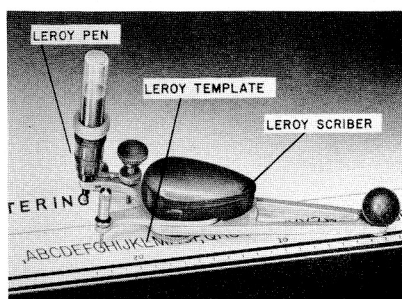
**720 Frelinghuysen Ave.**

**Newark, 07114 New Jersey**

# LETTERING GUIDES

Lettering guides are used to replace hand lettering. They are available in such forms as pantographic aids, stencils and templets. They are used in the production of headlines and novelty effects.

The instruments vary in price from \$6.20 to \$129.50 and the temples or lettering guides vary in price from \$1.30 to \$55.00 and are sold in art supply stores or through special dealers.



# LEROY

This is a pantograph lettering instrument that is called a scribe. There are three different types of scribes. There is the Fixed or non-adjustable Scribe, the Adjustable Scribe that produces vertical or slanting letters at any degree up to  $22\frac{1}{2}$  degrees from a single templet, and the Height and Slant Control Scribe that permits the user to control the height from 60 percent to 150 percent of the size and slant up to 45 degrees from a single templet. A special Letter Size Adapter, that can be attached to the Fixed and Adjustable Scribes, for extending or reducing the height of letters up to one-third of their normal height, is also available. Regardless of the scribe being used, the width of letters cannot be altered and always remains the same.

There are over 400 templates in 23 type styles, three foreign languages and special symbol templates available. They range in size from .05" up to 2" in height.

The templates are made from three layers of a special plastic material laminated together. The outside layers are white and the middle layer black.

Lettering pens are available in sixteen different thicknesses.

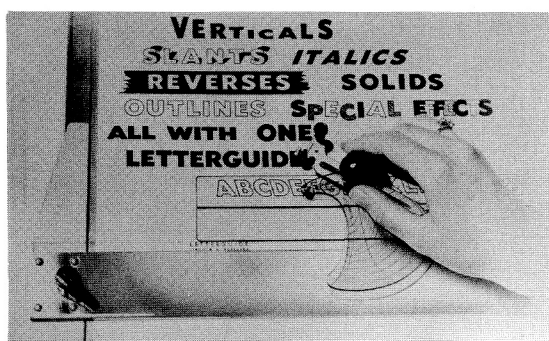
Nine different sets have been assembled in polished mahogany cases.

**Leroy® equipment is available from:**

**Keuffel & Esser Co.**

**300 Adams Street**

**Hoboken, N. J.**



## LETTERGUIDE

This is a 3 oz. pantograph (sliding triangle type) lettering instrument that is called a scribe. It can produce enlargements up to 150%, reductions down to 60%, slants and italics up to 60 degrees forward from any templet letter, with only the adjustment of one knob.

There are over 450 templets in 34 type styles that are made from a specially developed vinyl laminate and come in ten different sizes. The ten sizes are:

# 3. 3/16"	# 12. 3/4"
# 4. 1/4"	# 16. 1"
# 6. 3/8"	# 20. 1-1/4"
# 8. 1/2"	# 26. 1-5/8"
# 10. 5/8"	# 32. 2"

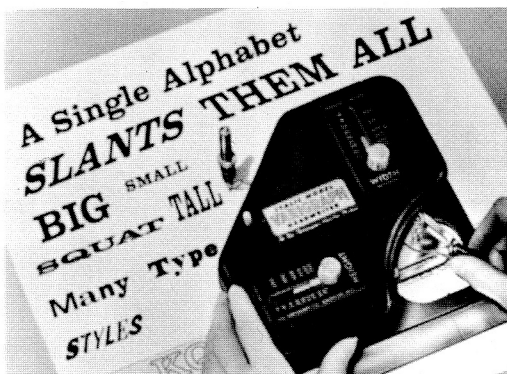
There are fifteen thicknesses of pen points available that come complete with cleaner pins. These pens can be used with all types of india ink, colored inks, water soluble and non-soluble inks, and with direct plate ink for lettering on offset paper masters and metal plates.

Special "starter kits" have been assembled for specialty work to fill the needs of the advertising agency, the silk screen shop, the lithography plant, and the college or high school.

The Letterguide is available from:

Letterguide Company  
2709 "O" Street  
Lincoln, Nebraska





## VARIGRAPH

This is a pantograph lettering instrument that can produce hundreds of sizes from 4 to 72 points. Circles and curves can also be set with this instrument that is 7" x 7" x 1-3/8" and weighs 1-1/4 lbs.

There are two controlling dials, one for the height and one for the width. The scales are in points and thousandths of an inch. There are five templet lettering sizes and approximately 200 different templates in Gothics, also available in reverse lettering. The templates are made from Scripts, Romans and Novelty faces. All of these templates are a light alloy. The five sizes are:

- 1" Templet produces lettering from .200" to 1.00"
- 3/4" Templet (full scale) lettering from .150" to .750"
- 1/2" Templet (2/3 scale) lettering from .100" to .500"
- 3/8" Templet (1/2 scale) lettering from .075" to .375"
- 1/4" Templet (1/3 scale) lettering from .050" to .250"

There are twelve different thicknesses of lettering pen points available.

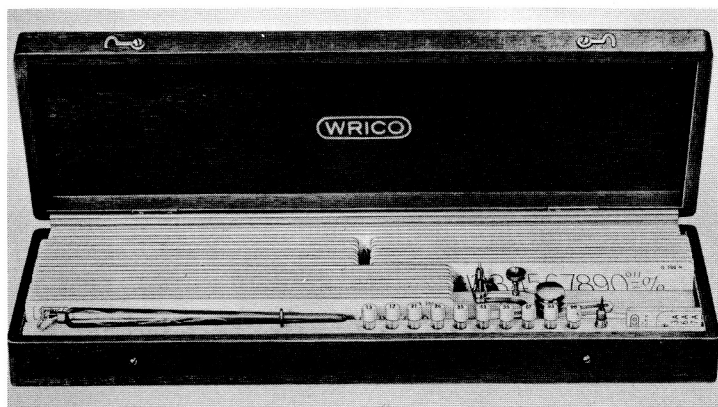
With the use of a special ink, lettering can be done on paper and metal offset plates.

A complete production outfit with a composing table (a special drawing board), with a curve attachment, 8 templates, pen, ink and paper is available.

There is also a Super Varigraph Model SV 58. This lettering instrument can use a pen, pencil or a knife to cut silk screen film letters up to two inches.

The Varigraph is available from:

Varigraph Inc.  
1498 Martin St.  
Madison 1, Wisconsin



**WRICO**

This is a pantograph lettering instrument that is called the Universal Scribe. With it over 100 variations from one lettering guide can be produced and angle up to 60 degrees or backward.

There are over 50 lettering guides that are made from a strip of Vinylite in fourteen different sizes. The top and bottom surface is a thin white stock with a center core of black. The fourteen sizes are:

- |                   |          |
|-------------------|----------|
| 1. .060 app 1/16" | 8. .200  |
| 2. .080           | 9. .240  |
| 3. .090           | 10. .290 |
| 4. .100           | 11. .350 |
| 5. .120           | 12. .425 |
| 6. .140           | 13. .500 |
| 7. .175           | 14. .625 |

There are ten thicknesses of lettering pen points available.

Ten different sets have been assembled in mahogany cabinets to store all the equipment. The contents of these sets represent an assortment of lettering guides that are commonly used.

Also available are over 125 lettering guide stencils in a variety of type styles and sizes. These stencils are made for a highly seasoned transparent plastic so a pen can be moved around its openings for the forming of letters.

Thirty special stencils for mimeograph work made of highly seasoned Pyralin are also available in eight different faces from 1/8" up to 3/4".

Wrico products are available from:  
 The Wood-Regan Instrument Co., Inc.  
 184 Franklin Avenue  
 Nutley 10, New Jersey

# DIRECTORY AND LISTING SYSTEMS

The machine and equipment in these systems are used for the preparation of directories, manuals, catalogues, price lists, address lists, indexes and similar listings which are subject to continuous changes.

Some of these systems use sequential card cameras that photograph individually printed or typewritten index or punched accounting machine cards. The information typed or printed on these cards is photographed, into columns and pages, on continuous rolls of paper or film. These cameras photograph these cards in sequence into lists at speeds up to 13,800 cards per hour.

Other systems use special accounting or index cards assembled into pages. These pages are photographed with a reproduction camera.

# CARTOPRINT

The Cartoprint system uses a continuous roll of pigmentized paper. This paper is made with perforations down each side to fit a special platen and holding device on an electric typewriter. The perforations assure the accurate positioning of all lines.

After the roll of paper is typed, the roll is cut into cards. The cut and punched cards are then sorted and arranged in their proper sequence, including headings and folios. The cards are then slid over an assembly track bar so they overlap.

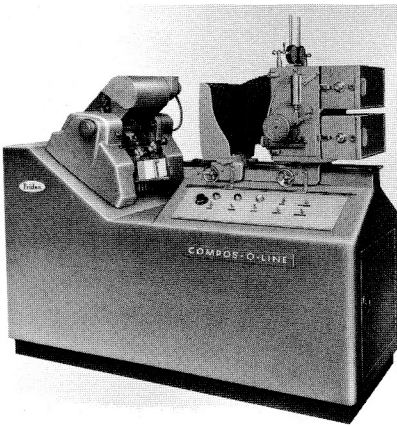
After the columns have been made up on the assembly track they are placed in a special automatic pre-set roll-camera. The exposure takes place column by column and the processing is handled in an automatic developing machine.

**The Cartoprint is available from:**

**Cartoprint Ltd.**

**Gl. Kogevej 119,**

**Copenhagen-Valby, Denmark**



## COMPOS-O-LINE

The Compos-O-Line\* system uses a sequential card camera to photograph original data typed, or printed, on plain or punched index cards into lists. This machine will take cards 3" x 5" up to 5" x 9".

The cards are arranged manually or by an automatic sorting machine into a desired sequence. When the cards are in their proper order, the Compos-O-Line will automatically divide up to 18,000 cards an hour into galley or page groups. By watching a counter, the operator can stop the machine after a pre-determined number of listings and insert a column or page separator, a heading and/or folio.

After the galley or page groups are made up, the cards can be photographed at a speed up to 7,200 cards an hour on a roll of film or paper 2" to 9-3/4". Up to 200 feet of film or 400 feet of paper can be stored on a roll. After the film or paper is processed, it is ready for pasteup or stripping. A printing plate is then made and the job printed on a press. It is also possible to make paper negatives, in positive or reverse, for use in office reproduction machines.

The Compos-O-Line can reduce the original type to one half or enlarge it to twice the size. With an optional type densification feature, the type can be condensed by one third.

Camera masks on this machine make it possible to photograph material in various positions on punched cards or anywhere on plain cards. It is also possible to select certain material from the printed or typed cards.

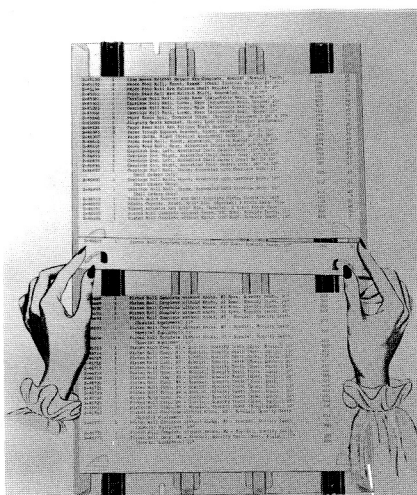
The viewing area is from 3 point up to 3-1/2 inches, and the movement of the film can be adjusted from 3 to 36 point.

A table model Compos-O-Line camera, Model JR, is also available.

The Compos-O-Line is available from:  
Friden, Inc.

\*A Trademark of Friden, Inc.

San Leandro, California



## FLEXOPRINT

The Flexoprint system uses special Flexoprint cards for data to be typed, printed or hand written on. Paste letters or black and white illustrations also can be included on the cards.

A special Flexoprint card platen holds the card in place when typed on. After the cards are completed, they are attached to a pair of stainless steel runways on a Flexoprint panel and made up into pages. The cards overlap and lock-in to each other and can be separated again for additions or deletions.

The Flexoprint standard panels and cards are designed for 8-1/2"x11", 6"x9" and 5-1/2"x8-1/2" pages. Special size panels can be made to meet specific needs. The cards are available for 1, 2, 3, or 4 column pages as well as header, bottom and illustration cards.

After full pages are made up, they are photographed in a reproduction camera to make a negative, from which a printing plate is made.

The Flexoprint panels are stored away in transparent envelopes for easy reference. Small size panels can be filed in a regular legal size cabinet drawer. The panels will store at approximately four to the inch.

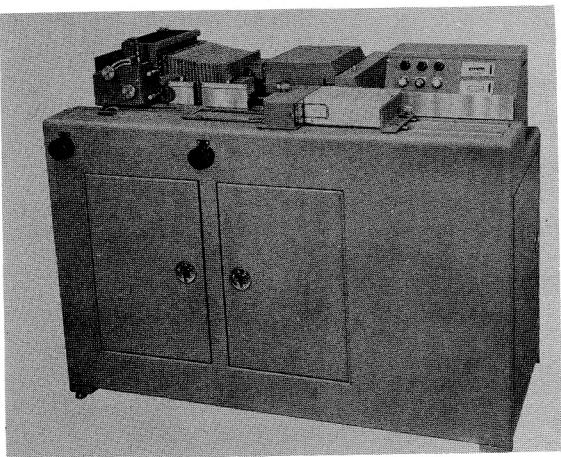
**The Flexoprint is available from:**

**Remington Office Systems**

**Division of Sperry Rand Corporation**

**122 East 42nd Street**

**New York, New York 10017**



## FOTOLIST MODEL 970

The Fotolist system uses a sequential card camera to photograph original data typed or printed on electric accounting machine or other sortable cards into lists. Each line of data is on a separate card.

The cards can be arranged either manually or by automatic sorting machines into a desired sequence. When cards are code punched for electronic sorting, it makes it possible to get a desired list in a desired sequence. When the cards are in their proper order, they are run through a card counter that automatically counts out the number of pre-determined cards to a page. After the cards have been counted, headings, column or page separators and folios are added to make full pages.

After the pages have been made up, the cards are placed into a hopper. At the push of a button, the cards begin photographing at 7,200 an hour on a roll of film moving in synchronization with the cards. A "pin-grip" system on the VariType Model 900 line composer machine and a similar "pin-grip" system on the Fotolist hold the pre-punched cards in hairline register.

On this model, reductions up to 50% of the original size as well as variable linespacing in fractions of a point and automatic masking for copy changes can be done.

The Fotolist will hold up to 100 feet of film 2-5/8, 3-3/4, 4-1/2, 5-3/4, and 9-3/4" wide.

### Model 90

This is a compact economy model that will fit an office desk and will process 3,600 file cards an hour.

Basically it will do the same as the Model 970.

The Fotolist is available from:

VariTyper Corporation  
720 Frelinghuysen Avenue  
Newark, New Jersey 07114



## PHOTO PANELS

The Photo Panels system uses a special white card that can be typed or printed on.

After the cards are typed, they are mounted on the Photo Panels by tucking the die-cut ears under a runway and nesting them together so they overlap, leaving only the typed portion showing. The cards are made to accommodate one, two, or three lines of copy in the proper widths so they will fit together properly.

The panels are made of aluminum with a white, smooth, baked enamel finish and come in one, two, three or four column arrangements. Special panels can also be made to fit special requirements. A special transfer tray that is used for straight line transfers of a column on one panel to a column on another panel is also available.

After the full pages are made up, they are photographed to make a negative. From this negative, a printing plate will be made.

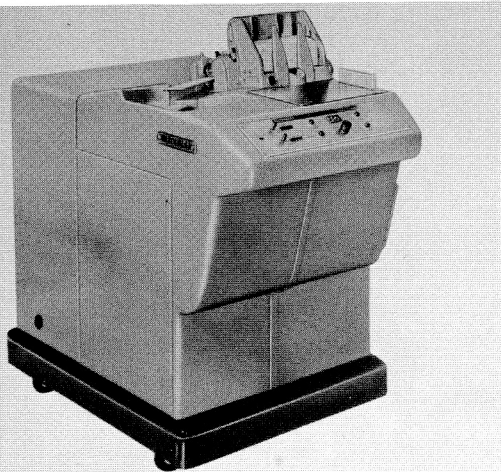
Protective jackets are made to fit the different size photo panels so the finished pages will be kept clean.

**The Photo Panels are available from:**

**Acme Visible Records, Inc.**

**Crozet, Virginia**





## **RECORDAK LISTOMATIC CAMERA**

The Recordak Listomatic Camera is used to produce sequential card composition. It consists of a card feeding mechanism and a camera synchronized with an electronic flash.

This machine will photograph one, two, or three lines of typed information or headings in 12, 24, or 36 point type on a standard 3-1/4 x 7-3/8 machine accounting (coded) card into a list at a rate of 230 cards, or up to 690 lines, per minute.

The cards that go into this machine are collated and arranged in their proper sequence and fed through the camera which photographs the copy on each card. After all the cards have been photographed, the exposed film is removed and processed in a Recordak Listomatic Film Processor. This film processor will take a 400 foot roll of Listomatic film and automatically process (develop, fix, wash and dry) all sizes of Listomatic film and paper up to and including the maximum 8 inch width at a rate of 4 feet per minute. The film is cut into galley form, made up into pages and stripped up. A printing plate is then made and the job printed on a press.

This machine can enlarge the original copy up to 20% and reduce it 55% of its original size.

The film advance spacing between lines can also be adjusted from 6 to 14 lines per inch at all reductions.

The film comes in 400 foot rolls, 8", 4", and 2.67" widths.

The Recordak Listomatic Camera is available from:

**Recordak Corporation**

(Subsidiary of Eastman Kodak Company)

770 Broadway

New York 3, N.Y.

# **TAPE FED EQUIPMENT**

## **SECTION 1.**

### **The Methods Used to Punch Tape for Linecasting Machines and the Tape Reading Equipment**

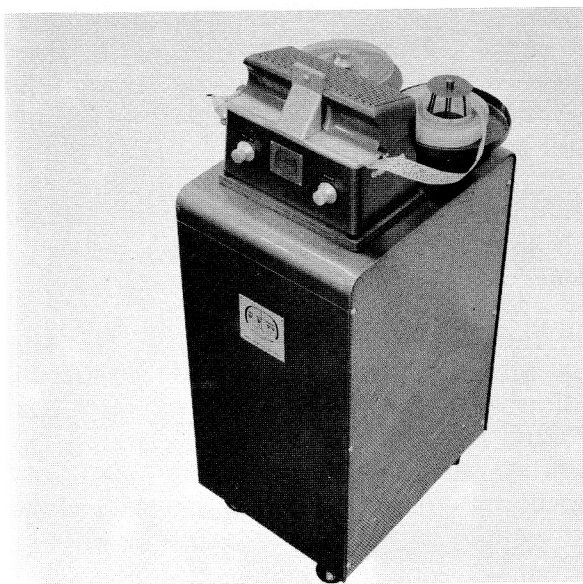
The number of plants using a perforated tape to actuate a typesetting machine is rapidly increasing due to the progress and refinements made in this type of equipment. This type of equipment lends itself to fast and accurate preparation of type for mass communication.

The big advantage of tape-fed equipment is the ability to set type for wire transmission. In other words, a tape punched in one city can be fed into a transmitter that will produce an identical tape or a type-written copy in another city or continent. The receiving plant feeds the tape into typesetting machines which produce the type.

This section of the resourcement deals with new equipment that is used with existing equipment and methods presently employed in the composing room.

This section is divided into two parts:

1. The methods used to punch tape for linecasting machines and the tape reading equipment.
2. The linecasting machines on which the type will be set.



## AUTSETTER

This is a system for the automatic tape control that can be applied to all keyboard linecasting machines, regardless of make or model. It operates at more than twice the speed of any existing composing machine in use today.

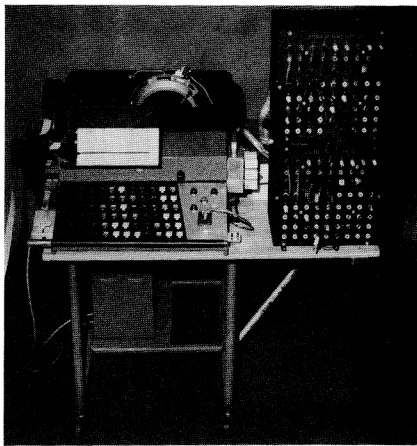
The Autsetter consists of six main components.

1. *The Code Reader* is a separate unit that reads the standard 6 hole tape that is punched on perforators or transmitted by the wire services. When a code in the punched tape is read, a signal is sent to the code converter. It is capable of operating at 1300 signals per minute. A variable speed knob on the front of the reader synchronizes the speed of the Autsetter to the speed of the line-casting machine.
2. *The Code Converter* is the brain of the Autsetter. It decodes the signals received from the code reader and sends them to the solenoids in the keyboard unit. This unit also recognizes places where delays are necessary for the efficient operation of the machine such as two characters, spaces and certain machine functions. This reduces to a minimum the number of transpositions.

Neither the code reader nor the code converter need be located near the machine. In fact, when space is a problem, it can be placed in a different room.

3. *The Keyboard Operating Unit* is attached to the back of the keyboard in an out of the way position so it will not interfere with the manual operation of the machine. This unit contains the 91 solenoids which automatically release the matrices when a signal from the decoder is received.
4. *The Assembling Elevator Lift* is operated by a special electric clutch mechanism. It uses the principle of harmonic motion to assure a smooth action while the machine is in operation.
5. *The Manual Control Unit* attached on the right of the keyboard consists of five push buttons. The two top buttons control the upper and lower rail positions on the assembling elevator. The third button controls the lifting of the assembling elevator. The fourth button controls the elevator clutch. The fifth button controls the tape operation of the machine. For the exception of the upper and lower rail buttons all control buttons are lit when in operation.
6. *The Autsetter Mat Dectector* is used as a safety device. If a mat fails to drop, the Autsetter will stop automatically. This will prevent many typographical errors and machine problems caused by mats failing to drop.

The Autsetter is available from:  
Star Parts, Inc.  
South Hackensack, New Jersey



## BREWER KEYBOARD

This is a linecasting machine keyboard that fits over a Teletypesetter perforator keyboard. It was designed for members of the International Typographical Union who are linecasting machine (linotype and intertype) operators. This keyboard enables workers to apply their skills to the Teletypesetter without going through a retaining period. This eliminates the need for learning another keyboard with a different fingering system.

The Brewer Keyboard can also be adapted to other machines with a standard typewriter keyboard.

**The Brewer Keyboard is available from:**  
**International Typographical Union**  
**301 S. Union Boulevard**  
**Colorado Springs, Colorado**

# DIRECTORY TAPE PROCESSOR

This is a specialized computer for telephone listing composition. It operates from a perforated tape prepared on conventional perforators.

The tape fed into the DTP Reading Head contains only lower case characters, numerals and a minimum of space codes. The DTP eliminates the functional and control keystrokes that break the rhythm of typing and take more of the operator's time such as rail shifting, shifting for capitals, unshifting from capitals back to lower case and leaders. The DTP computer produces automatically a fully coded teletypesetter perforated tape on its Output Punch with all the information for capitals, rail shifting, justification, number of leaders needed to fill a line, the number of lines the copy will make and line elevate at a speed of about 800 lines per hour.

The control and functional codes inserted by the computer represents a savings of approximately 40% in manual keystrokes, an operator production gain of approximately 65% and a reduction in operator and machine errors.

Over 60% of all the telephone directory listings done in the United States are now being processed by DTP equipment. This is in just 3 years after it was introduced to the printing industry.

The Directory Tape Processor can be used where hot and cold type methods are employed.

**The Directory Tape Processor is available from:**  
**Compugraphic Corporation**  
**90 Main Street**  
**Reading, Mass. 01867**

# LINOMATIC TAPE SYSTEMS

This system consists of an operating unit and a perforator for the automatic tape operation of a linecasting machine.

1. *The Linomatic Operating Unit* consist of three main components.
  - a. *An Electrical Control Assembly* which includes the tape reader, a power supply, and a relay memory unit. This free standing unit can be physically located where it is most convenient for the tape operation of a linecasting machine.

This unit also recognizes places where delays are necessary for efficient operation of the machine functions. The tape incorporates delays for three or more characters in sequence. The operating unit also provides a delay when a character on the right side of the keyboard is followed by a character on the left side of the keyboard. This reduces to a minimum the number of transpositions. Safety delays such as this, in high speed operation, can be switched out of operation at lower speeds.

- b. *A Mechanical Decoder* which attaches to the back of the keyboard. This part converts the electrical code signals from the tape reader into mechanical settings capable of controlling the operation of a linecasting machine. The speed of the Decoder is faster than any typesetting machine but it can be run at any speed without special adjustments.

The electrical control unit and the mechanical decoder are joined by electrical cables.

- c. *An Actuating Mechanism* that controls the assembling elevator. It actuates the rail mechanism on conventional linecasting machines. This part is not necessary on the Elektron.

- 2. *The Perforator* features a feather touch typewriter keyboard that can handle up to four type faces with push-button ease. When it is necessary to mix type from adjacent magazines, the operator can do so by depressing the desired font key which produces a code in the tape. This code controls the shifting of the magazines on the linecasting machine.

The ability of the LOU to mix different faces in the same line and accurately justify them is due to the counting magazine for each font, which electrically counts the width of each mat.

If a reader's copy is wanted, it can be obtained through a plug-in optional unit. This is achieved with another typewriter which responds to the striking of the keys on the perforator.

**The Linomatic Operating Unit is available from:**

**Mergenthaler Linotype Company**  
**29 Ryerson Street**  
**Brooklyn 5, N.Y.**



# ROBOSET

This is a completely automatic, all-electric system for perforating tape and operating linecasting machines.

The Roboset consists of seven main components.

1. *The Keyboard* comes in two basic arrangements.
  - a. *An Electric input typewriter keyboard* for those who want "hard copy." Directly above the keyboard is a scale that shows the accumulated length of the line being set. When a line is within justification range, a light flashes on. If the line becomes too long, another light will flash on.
  - b. *An electric linecasting machine keyboard* that uses a similar justification scale as the one on the typewriter keyboard. For those desiring "hard copy," and electric output typewriter can be hooked up to the keyboard.
2. *A Type Face Selector* with a justification counting system. Justification on the basis of one hundred and twenty-eight units to the em makes it adaptable to any type face with accuracy. This system will accommodate up to four different type face counting boxes at one time by turning a knob. This makes it possible to change type faces in the middle of a line without losing count.

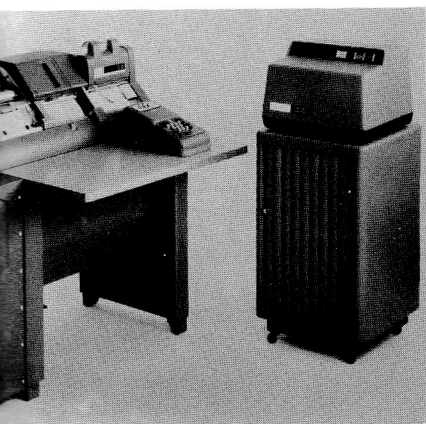
3. A *Function Selector Panel* that is used with an electric input typewriter. It takes care of special functions that are not available on the typewriter keyboard such as upper and lower rails, spacing, quadding, special characters, etc. These functions are also available in a special panel which fits into the front of the typewriter keyboard. Line lengths are set by such buttons.
4. A *Tape Perforator* that is capable of punching up to 30 characters of 6 or 7 hole code tape per second. The tape can also be back-spaced and erased from the keyboard.
5. A *Tape Reader* unit that utilizes a photo-electric reading system that is capable of decoding tape at high speeds. It can read as well as transmit to a remote perforator. This unit does not have to be placed alongside the linecasting machine. This permits remote monitoring and programming of linecasting operations. The reading speed on this unit is adjustable.
6. *The Operating Unit* is mounted on the back of the keyboard and it will not interfere with the manual operation of the linecasting machine.
7. An *Autocorrection System* that takes an original tape and a correction tape and reads them simultaneously. The original tape is read until a correction appears. A switch is then made automatically over to the correction tape. After the correction has been made, it switches back to the original tape. The end result is one corrected tape.

The Roboset is available from:

Crosfield Electronics, Inc.

47 New York Avenue

Westbury, New York



## SYSTEMATICS K-177

This is a punched card to tape converter that operates at a speed of fifteen characters per second.

This system consists of three main components.

1. *The Control Module* which consists of a code translating and programming circuit. This unit is mounted on the end of any IBM card punch.
2. *The IBM Card Punch* which serves two purposes. It is both a key-punch and a card-to-tape converter. It will use any 024 or 026 Card Punch as an automatic card reader. The Card Punch must be equipped with the IBM Auxiliary Duplication and Alternate Program features. By turning off the power switch the system is shifted from card conversion to manual keypunching.
3. *The Tape Punch* which is a Universal Code P76 Tape Punch that will perforate a 5, 6, 7 or 8 channel tape of any code structure and any width from 11/16" to 1".

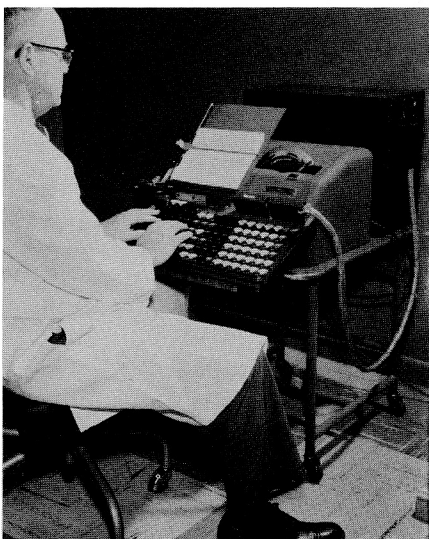
The Systematics K-177 is available from:

Systematics

General Instrument Corporation

3216 W. El Segundo Blvd.

Hawthorne, Calif.



## TELETYPESETTER

This system is used to set type on a linecasting machine automatically by using a 6-channel perforated tape. The basic Teletypesetter consists of two units — a perforator and several accessories are available for resinement of the system and operating unit.

1. *The Perforator* consists of three main parts. They are:
  - a. *The Keyboard* consists of a layout similar to that of a typewriter. Additional keys have been added to control the various linecasting machine functions. It has a top speed of 1035 strokes per minute.
  - b. *The Punch Mechanism* punches a six channel tape every time a key is struck.
  - c. *The Indicator Scale* consists of a counting scale and justification pointers. They show the operator when he is within justification range.

The operator signals the end of each line by striking the return and elevator keys. This resets the counting scale and the justification pointers.

There are four kinds of perforators. They are:

- a. *The Standard* is generally used for straight matter composition with unit-font type faces.
- b. *The Multiface* is used when a variety of type faces are needed. Both perforators automatically control the duplex rail for italics and bold face.
- c. *The Universal Perforator* is designed to perforate a tape to be used on a mixer linecasting machine.
- d. The non-counting Perforator is used to prepare unjustified tape for computer input.

The tape punched on the perforator can be saved and rerun at a later date.

2. *The Operating Unit* is mounted on the linecasting machine. The perforated tape is fed into the operating unit. It is here that the tape is decoded into mechanical action. The tape operates the machine automatically.

One of the big advantages of Teletypesetting is the ability to set type by wire transmission. To do this, the perforated tape is fed into a transmitter distributor. At the receiving end, a duplicate tape is automatically produced on a Reperforator or a typewritten copy of the tape on a Page Printer. It is possible to set type this way across continents or from one continent to another.

Among the accessories available are the *Teletypesetter Mat Detector*, an electromechanical system in a compact box, that is mounted on the linecasting machine, for the purpose of eliminating repetitive errors caused by damaged mats and faulty magazine escapements.

Other accessories include an automatic selective Allotter for directing the tape to the correct linecasting machine; a rule dropper for automatic insertion of rules in classified ads; tables, readers, punches, etc.

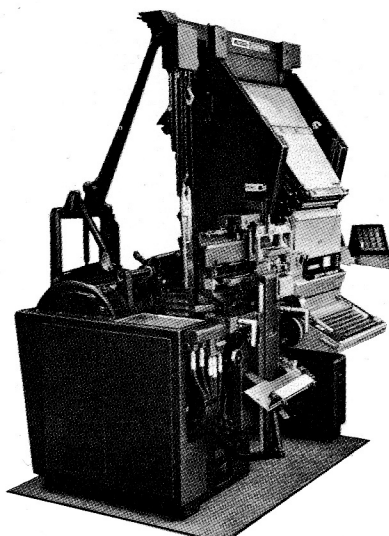
**The Teletypesetter is available from:**

**Fairchild Graphic Equipment**

**Fairchild Drive**

**Plainview, L. I., New York**

TAPE-FED EQUIPMENT  
SECTION II.  
The Linecasting Machines on Which  
the Type Will Be Set



## ELEKTRON

This is a hot metal, tape operated, linecasting machine designed for speed. It operates at a maximum speed of fifteen lines per minute.

This is a completely new machine which uses the principle of the circulating mat. It has a continuous, uninterrupted assembly of mats; straight-line mat travel that eliminates the assembling elevator; push-button control of basic functions, such as shifting and fanning of up to four magazines; hydraulic justification of spacebands.

By eliminating the assembling elevator, the Elektron can assemble mats continuously, without interruption. These new features have made possible the new high standard of speed.

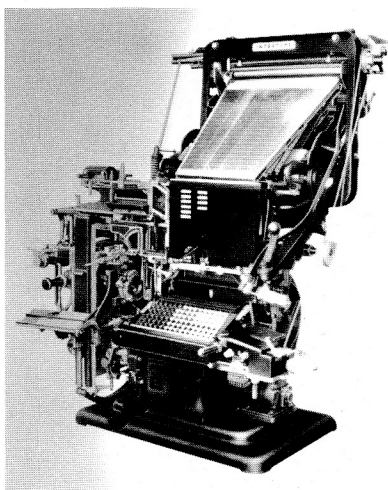
Inasmuch as this machine is designed as a high speed tape operated linecasting machine, it can also be manually operated when necessary.

The Elektron is available from:

**Mergenthaler Linotype Company**

**29 Ryerson Street**

**Brooklyn 5, N. Y.**



## MODEL C4

This is a hi-speed linecasting machine that uses the principle of the circulating mat. It is made so it can be equipped with a TTS (Teletypesetter) operating unit to meet the requirements of non-mixed typesetting.

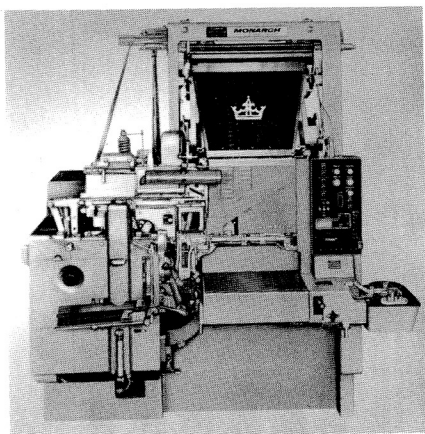
A standard model of this machine comes equipped with a four mold disc, four 90-channel Visilite magazines, a gas or electric pot, as well as other features.

Optional equipment that can be installed on this machine is a single or dual duty quadder, a mold cooling blower, a six mold disc, a Teletypesetter adapter keyboard, a variable V-belt drive, automatic safeties, as well as other features.

**The Model C4 is available from:**

**Intertype Company  
360 Furman Street  
Brooklyn 1, N. Y.**





## MONARCH

This machine is designed to operate automatically from a perforated tape at 750 impulses per minute. The matrices are released fast enough to cast 14 lines per minute of news text.

The nerve center on the right side of the Monarch is a control panel with signal lights and push buttons. If the machine should stop, a light will flash locating the source of the trouble. A lever on the panel also controls the speed of the casting mechanism. The machine can be made to cast from 8 to 14 lines per minute.

**The Monarch is available from:**

**Intertype Company  
360 Furman Street  
Brooklyn 1, N. Y.**

# ELECTRONIC MACHINES AND COMPUTERS FOR TYPESETTING

This phase of new methods has done more in its short life to revolutionize the thinking of printers today than the other methods previously described. Through this type of equipment and the miracles of science, the printing industry will continue to see dramatic changes.

The ability of some of these computers to justify lines and hyphenate a word at the end of a line does a lot to increase the production of the printed word. It is estimated that 20 to 25 percent of newspaper lines must be hyphenated. Instead of a typesetter stopping to check the proper division of a word, he can continue to set and punch an unjustified tape, without interruptions. When he is finished punching the unjustified tape, it is fed into a computer which will produce a new justified tape with proper word division. This new tape will then be fed into a typesetting or high speed printing machine.

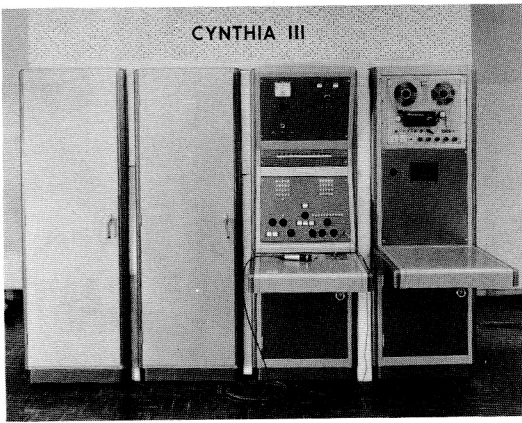
Other areas of electronics and computers are high speed printing units that can print thousands of characters per second.

The future of the printing industry definitely lies in this phase of new methods. It is expected that in the very near future printing will start with someone talking into a microphone. The signals from this microphone will be bounced off a satellite and a tape punched. The tape will be fed into a computer that will print the story and tell the world exactly what happened minutes after it took place.

Actually, every bit of this is available today and it is just a matter of tying them together.

It is also expected that these methods will produce "instant books" and newspapers. By merely pushing a button, the book or newspaper of your choice will be produced, pictures and all, in a matter of a few minutes.

These are the things the printer today can expect to find in the very near future. This is why he must continue to learn as much about these methods as he possibly can.

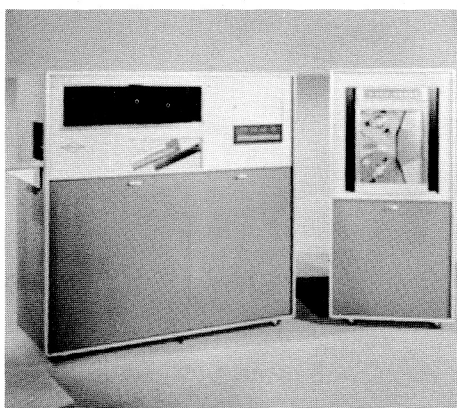


# **ELECTRONIC RECOGNITION MACHINE**

This machine is capable of recognizing a group of words spoken into a microphone learning within a few seconds and then responds instantly by producing digital output code for each spoken word.

This machine can also be used to recognize signals by the scanning of images, written or printed material, signals involved in process control, and other forms of signals.

**The Electronic Recognition Machine is available from:**  
**Andromeda, Inc.**  
**Kensington, Maryland**



## **FARRINGTON OPTICAL SCANNER**

This machine is a character recognition device that is capable of reading typewritten copy and translating it into electrical mechanical impulses capable of punching common language 5-, 6-, 7- or 8-channel paper tape at 240 characters per second.

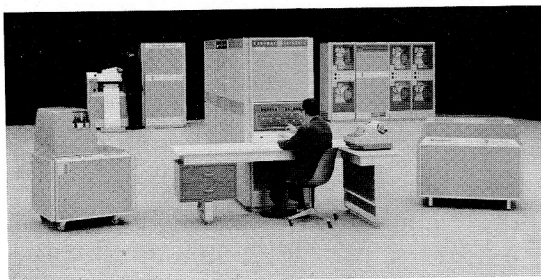
The machine consists of a scanner, a computer and a tape puncher.

**The Farrington Optical Scanner is available from:**

**Farrington Electronics, Inc.**

**Shirley Industrial Area**

**Springfield, Virginia**



## GE 225

The GE 225 is a computer that provides an information processing system that can be used by newspapers.

The GE 225 used by a newspaper for its classified department could collate new ads with ones that have already appeared in previous editions. It will punch a tape that is arranged in sequence by its classification and alphabetically within its classification. The ad remains on tape after it appears in the paper in case it is rescheduled. For its accounting department, a daily as well as a monthly statement could be produced. An accounts receivable register can also be kept. For the circulation department it can produce loading bills showing the number of papers going on each truck and where the papers are to be delivered.

This system is centered on the *Central Processor* which has a magnetic core memory that will simultaneously read, write and compute the information of all peripheral units. It has the input-output ability to process and produce alphabetic, numeric, binary or decimal information from punched cards, magnetic tape, punched paper tape, magnetic ink character recognition equipment, mass random access memory equipment and other equipment that can be tied in with the system. The Central Processor will respond to 150 commands including input and output. It will also add, subtract, multiply, divide and do logarithmic operations.

*The Control Console* on the Central Processor has 20 program control switches, register display lights, indicator lights, power switches and status lights. From the Control Console, the operator has complete control of the entire system.

Other peripheral units in the system that feed as well as take out information from the Central Processor are:

*The Console Typewriter* which types ten characters per second under the control of the Central Processor. It also monitors the systems operations, prints direct output from the Central Processor, prepares short summary reports and gives operator instructions.

*The Card Readers* that read information into the Central Processor. They will read 80 column Hollerith or binary punched cards with 10

or 12 rows at a speed of 400 or 1,000 cards per minute. It will accept alphabetic or numeric information. The readers will operate simultaneously with other computer and input-output operations.

*The Card Punch* which will punch 100 to 300 cards per minute with alphabetic or numerical information from the Central Processor on 80 column Hollerith or binary cards with 10 or 12 rows. The Card Punch operates simultaneously with computing and other input-output operations.

*The Magnetic Tape Sub System* is a means of providing a high speed input-output of information for the system. It operates at transfer rates of 15,000, 41,600 and 60,000 characters per second. It permits the storage of information into a small area. It will store 200 and 556 characters per inch at 75 and 112.5 inches per second. The system will operate simultaneously with computing and other input-output operations.

*The High Speed Printer* which is controlled by the Central Processor delivers 900 lines per minute in a flexible print format.

*The 12-Pocket Document Sorters* are mechanical document transporters. They pick up magnetically imprinted documents, one at a time, and feeds them past a reader which transmits the information to the Central Processor. It will sort and insert 1200 documents of varying quality, size, and degree of mutilation per minute into its proper pocket. The document sorters will operate simultaneously with computing and other input-output operations.

*The Mass Random Access File* provides a large auxiliary file memory. It is used to store and transfer information. It has a transfer rate of 75,000 characters per second from its outer zone and 37,500 characters per second from its inner zone. It can operate simultaneously with computing and other input-output operations.

*The Paper Tape Reader and Punch* reads 250 and 1,000 characters per second recorded from 5-, 6-, 7-, or 8-channel punched paper tape and transmits it to the Central Processor. It also punches information directly from the Central Processor into 5-, 6-, 7-, or 8-channel tape at a speed of 110 characters per second.

It is not necessary to buy all the peripheral units in this system. The buyer can select those units he needs.

**The GE 225 is available from:**

**General Electric**

**Computer Department**

**Phoenix, Arizona**



## IBM 1620

This is a computer system that is used to prepare a tape with hyphenated and justified lines, from a raw tape, that will automatically operate a typesetting machine.

Newspaper stories ready for typesetting can come directly from a reporter's typewriter equipped with a tape perforator or given to a typist who will prepare a raw tape. The typist does not have to be concerned with hyphenated or justified lines. The tape punched by the typist is fed into the computer which reads the tape and punches a new tape at 85 fully justified and hyphenated single lines per minute. The tape punched by the computer is then fed to a typesetting machine that will automatically set the type.

Special instructions can be fed into the computer to tell it when to indent left or right, when to center, when to set bold face and when a story ends. Special instructions for the setting of tabular work, run arounds and other intricate work can also be fed into the 1620.

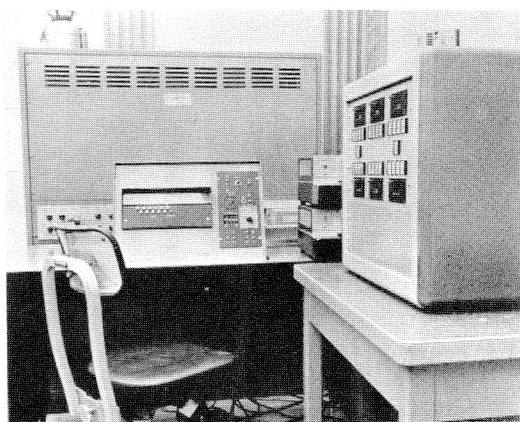
One of the big advantages of this computer is its ability to properly hyphenate words at the end of lines. Nearly three million words have been stored in its memory unit. As a line is assembled, an extra word is added. The 1620 tries to fit this extra word into the line by word spacing and letter spacing. If the word does not fit, it is hyphenated at a point where it can be best divided. The proper hyphenation is found by scanning the word to find the number of syllables, the vowel groupings, and the place where a hyphen is most to be found. If the word can be hyphenated, it is done at the point of greatest probability. If the word cannot be hyphenated, it is carried over to the next line and the previous line is spaced out to fit the column.

**The IBM is available from:**

**IBM**

**Monterey & Cottle Roads**

**San Jose 14, Calif.**



## LINASEC

This is a computer that takes an unjustified perforated tape and produces a tape for a typesetting machine. It can read and punch more than 7200 typical newspaper lines an hour. Lines ending with a full word are automatically punched into the new tape. A line requiring a hyphen at the end will automatically stop the machine. The word is then flashed on a cathode ray screen. A person monitoring this machine will make the decision by pushing one of several keys and the machine will continue to punch the new tape until another decision is needed.

After all human decisions are made, the Linasec will still produce more than 5000 lines per hour.

The Linasec system consists of a monitoring console, a photoelectric reader, a high speed teletype punch and the Linasec computer.

**The Linasec is available from:  
Mergenthaler Linotype Company  
29 Ryerson Street  
Brooklyn 5, New York**



# LINOTRON

This is a system designed to set type on film by a magnetic tape controlled by a digital computer system.

This system uses a cathode ray tube to display alpha-numeric and symbolic picture information. The information displayed on the face of the cathode ray tube is copied on film, letter by letter and line by line to make up the printed page, and automatically processes it at a high speed. The final output of the GA-1000 consists of photographs that are processed by standard printing shop techniques to produce printing plates.

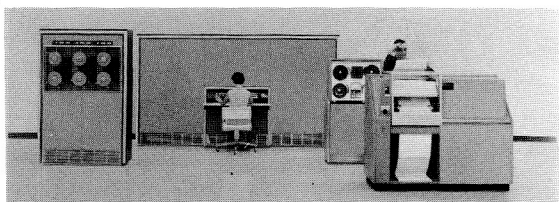
The Linotron will give typographic quality equal to hot metal type methods with complete flexible justification, proportional spacing and leading provisions. It will operate at an average speed of 1,000 characters per second including the film handling. Up to 10,000 characters per second could be handled by this method by sacrificing the quality of the characters.

The character generator uses a wired-in magnetic core storage technique which determines the typography of symbols. The basic memory unit can be unplugged and replaced with a different set of symbols. Proportional spacing for each character can be built into the character generator memory storage unit. The characters are formed by line rasters.

The lens of the camera has a special five element 2-to-1 enlargement lens with a 12" focal length and a speed of f4.

Alphabetizing, inserting, deleting, collating, typesetting and page make-up to programmed dimensions can be accomplished by the Linotron in conjunction with a digital computer system.

The Linotron is available from:  
Mergenthaler Linotype Company  
29 Ryerson Street  
Brooklyn 5, N. Y.



## RCA 301

This is a computer system that is designed for newspaper work. After news has been edited, it is put on tape by a typist. The typist punches an unjustified paper tape. He does not have to be concerned with justification or hyphenation. The paper tape is fed into the computer by a Paper Tape Reader. From this unjustified tape, the computer will produce a justified and properly hyphenated tape that can be fed into a linecasting machine, at the rate of 300 characters per second. The computer keeps a character count on each line and decides whether the line can be justified with spacebands or whether hyphenation is needed. If there is space at the end of a line, the computer finds out whether the expansion of linecasting machine spacebands will fill the line. If this does not do it, it will try to hyphenate the next word. If hyphenation is needed, a memory search is made by the computer for the correct answer. First it tries a prefix and suffix table and then a Data Disc File that will select the hyphenation that will put the largest number of characters on a line. At milli-second speed, a search is made of a 300,000 word vocabulary plus all the frequently used local and proper nouns. If a word cannot be found in the dictionary, it is automatically hyphenated after the third, fifth, or seventh letter. After hyphenating, it goes back to filling the line with space and proper justification.

Not only does the 301 justify and hyphenate lines but it will process classified ads systematically, accurately, and fast. All ads placed in a classified section can be automatically arranged in sequence and alphabetized according to its classification as well as make last minute insertions and deletions.

The 301 can also maintain an up-to-date list of mail subscribers and prepare mailing labels. For the accounting department it can do billing, general accounting including payroll, general ledgers, and accounts payable and receivable. For the circulation department it can calculate the daily press run as well as prepare a shipping ticket for both newsstand and home delivery. It can also be used to make an analysis or sales statistics for sales promotion purposes.

Other peripheral equipment such as a thousand cycles per second paper tape reader, a 100 cycles per second paper punch, and a thousand

lines per minute printer can be used with this computer system.

Intercontinental typesetting is also possible by the Relay 1 satellite and by cable. Intercontinental typesetting of computerized news is now possible.

A demonstration of this was made possible in June 1963 when the National Aeronautics and Space Administration made available the RCA-built Relay satellite.

During this demonstration, stories were transmitted from Camden, New Jersey, to Great Britain by satellite, after the RCA 301 computer electronically word spaced and hyphenated the copy for Manchester, Glasgow and Edinburgh newspapers. The coded paper tape received in England was fed directly into linecasting machines. From Rio de Janeiro, another news story was flashed via the satellite through the Camden computer and on to Chicago where it was fed by wire service to teletypesetter circuits serving hundred of U.S. newspapers.

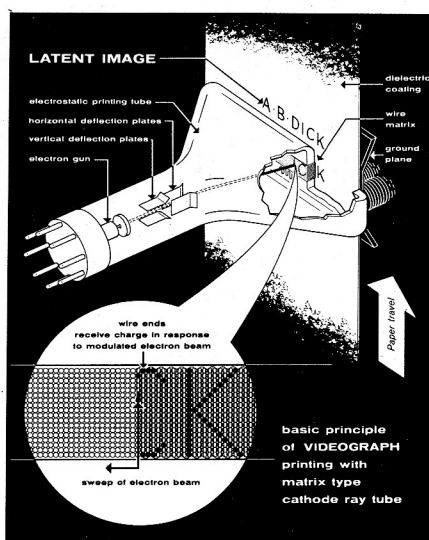
The RCA 301 is available from:

Radio Corporation of America

Electronic Data Processing

Cherry Hill, Delaware Township

Camden 8, New Jersey



## VIDEOPRAPH

This is an electrostatic printing and developing technique that makes possible ultra-high-speed non-impact printing at rates up to 30,000 characters a second. The key to this method is the utilization of video (television-like) signals to "write" the character images on a moving web of dielectric coated paper.

This equipment uses an electrostatic printing tube (EPT) which is designed to accomplish high-speed printing. The EPT is a variation of the conventional, yet somewhat smaller, TV picture tube wherein the phosphor screen is replaced by a matrix of extremely fine wires extending through and sealed into the faceplate at a packing density of 62,500 wires per square inch of surface.

Video signals representing the characters and symbols to be recorded are applied to the deflection system of the electrostatic printing tube (EPTO). These signals direct the electron beam within the tube to "write" the character forms on the inner side of wire matrix. Current passing through the wires which are in contact with the moving paper web places an invisible electrostatic charge pattern on the paper conforming to the character image. The paper is then passed through a developer hopper where the image is made visible by brushing the surface with a dyed thermoplastic resinous powder. The image is then made permanent by fusing with infrared heating elements.

The video signals required to drive the EPT in one instance are generated by optical scanning equipment and documents or other graphic data. These are forwarded from the transmitter location to the Videograph printer. In a second application, computer language in the

form of digital, pulse-coded signals are transmitted over telephone facilities to the printer site. At the printer site, machine language is converted into human language, or alpha-numeric characters and symbols, at rates up to 20-to-30,000 characters per second with the Videograph Character Generator. The video-signal output of this unit is then applied to the EPT for production of readable printout.

This method of printing is used in the Model 910 Videograph Address Label Printer which is capable of printing continuously over 130,000 1" x 2-3/4" address labels per hour. Together with the Videograph Model 940 Tape Reader and Buffer Unit, which includes two magnetic tape handles, a magnetic core memory, and a control logic, it forms a complete sub-system for producing address labels from unedited magnetic tape files prepared on a computer.

The Videograph 921 Scanner and the 902 Printer are used to transmit documents. It will transmit and print documents with handwriting, drawings, maps, pictures, or graphically printed documents between geographically separated locations. The 921 will transmit 600 8-1/2" x 11" original documents per hour. Continuous length documents can be scanned at 15 feet per minute. The 902 Printer will print 600 8-1/2" x 11" permanent, dry documents per hour on standard weight paper.

The Model 904 Printer is used in systems involving a digital computer where pulse-coded "machine language" is the transmission medium. The Videograph monoscope character generator translates machine language into video waveforms needed to drive the Videograph Printer which serves as a 1,000 word-a-minute teleprinter. Digital signals can be transmitted over conventional telephone lines, the output from a central computer can be printed by any number of Videograph printers at geographically separated locations.

Videograph is available from:

A. B. Dick Company

5700 West Touhy Avenue

Chicago 48, Ill.

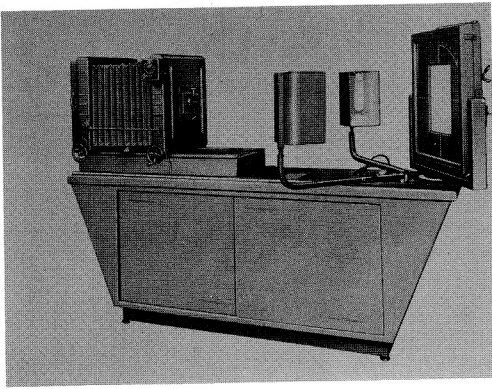
# PHOTO MODIFICATION EQUIPMENT

This type of equipment is basically a copying camera that can be used for a specialty type of work.

Photo Modification Equipment is used to modify or change the original copy and give it a new perspective or used to make a certain job, an ad, or part of an ad, a given space by reportioning it.

This is the case in the Fotomaster and the Clydesdale cameras, but the Otype is different. Its main function is to justify the right hand margin of typewritten and other type of copy flush left, not to produce unusual or different effects.

This type of equipment varies in price from about \$2,000 to \$8,000.



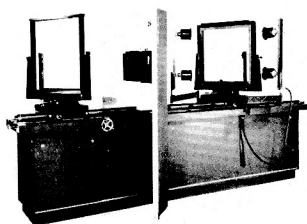
## CLYDESDALE

This is a reproportioning camera 96" long equipped with a 14" Goerz Artar red Dot lens that can be turned 30 degrees, and a 25" x 25" glass covered tilting copyboard that can be turned to 50 degrees.

On this camera one can condense, expand, heighten, squat, italicize or backslant type.

This camera will also enlarge two times, reduce five times or be used for straight copying.

**The Clydesdale Camera is available from:**  
**Graphic Arts Research Foundation**  
**112-114 W. Kinzie Street**  
**Chicago 10, Illinois**



# FOTOMASTER

This is a regular darkroom type copy camera 11' 4" long that is equipped with a 16-1/2" Goerz Artar color corrected f.9 coated lens, a 32" x 28" copyboard and a 24" x 24" film holder. The operator works in subdued light behind the camera in an open darkroom.

The Fotomaster is primarily a modification camera that comes with 7 prisms and 12 different shapes to change the dimensions of an original piece of copy. With these prisms and shapes it can italicize or backslant roman type, stretch or condense type, thick or thin type, outline solid face types, create any sort of perspective or curve from a straight line of type. It will also enlarge over two times and reduce down to seven times.

An optional device called the Modi-circle makes it possible to photograph a straight line of type, border or rule and convert it into a complete circle or any part of a circle.

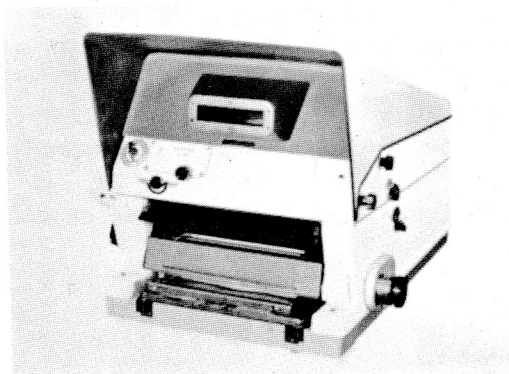
This camera is not limited to typographic line proofs. It can take a full ad and change its proportions. For example, a wide ad can be made narrow and vice versa.

Another feature of this camera is the Stat Unit that is used to make direct reading reverses on either film or photographic paper. Positives and negatives can be made with this unit.

Although the Fotomaster is primarily a modification camera, it can also be used as a straight copy camera.

**The Fotomaster Camera is available from:**  
**Modi-Graphic, Incorporated**  
215 E. Ninth Street  
Cincinnati, Ohio





## **OPTYPE**

This machine uses an optical method of justifying the right hand margin and photographing line by line typewritten, linotype, hand set, or any other conventional hot metal or cold type supplied in the form of copy or proof.

This machine weighs 250 lbs. and is 35" long, 17" wide and 18" high. It produces a film negative ready for platemaking.

The following variation from a single type style up to 3/4" high can be made.

1. Increase the height by 12 percent without changing the width.
2. Reductions up to 25 percent in one operation. Further reduction up to 44 percent by a second operation.
3. Italicizing a roman word or words within a line or an entire line.
4. Justifies, italicises, condenses and reduces in one operation.
5. Condensing one or more words or a line.

All operations mentioned here can be combined in a single job.

Line drawings can also be reproduced on this machine by using the continuous exposure unit on the machine. When reproducing halftones,

it is done the same way as line drawings, except that it is necessary to use Autoscreen film. Both line drawings and halftones can be produced in various sizes and proportions.

The justification limit is seven percent of the length of the line and the machine can be operated at a speed of five seconds per line (over 700 lines per hour).

This machine can be operated in a room under normal lighting conditions.

**The Optype is available from:**

**Ateliers Bariquand & Marre**

**77 A 81, Av. Aristede-Briand**

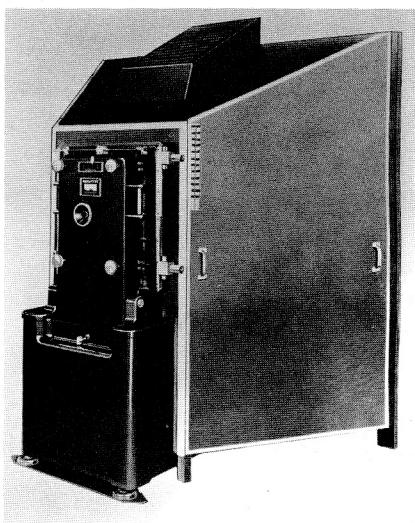
**Arcueil (Seine) France**

# CONVERSION METHODS

This area of new methods deals with the converting of hot metal type into cold type by photographing the type with a camera, by pulling reproductive proofs on acetates, special non-fibrous papers, and special conversion films where hot metal type is converted directly into a film negative without the use of a camera.

Another method of conversion is to pull proofs, type, or draw on direct image offset plates using special inks, typewriter ribbons, pens, pencils and crayons.

By using conversion methods, the printer can use his hot metal equipment to produce a product comparable to that produced by phototypesetting methods. The advantage of using conversion methods is that it eliminates the need for the printer to invest in a lot of new equipment and can retain his present staff of employees. It also permits the printer with hot metal equipment to compete with his competitors who are using phototypesetting machines.



## BRIGHTYPE

This is a method of converting a letterpress form directly to photographic film or paper in one operation. This is done by photographing the form with a special same size camera. The Brightype camera will photograph an image up to a 30 inch circle or an 18" x 24" rectangle.

The Brightype method can be used to convert any letterpress form into photographic material for any printing process. Four heights of forms can be photographed whether it be type high, type high on a galley, an 11 point electro or a .065" engraving.

To prepare a form for the Brightype camera, the entire form is sprayed with a fast drying liquid lampblack. The coating is then removed from the printing surface with a rubber eraser, making the form look like a negative. The form is then centered on the copyboard and clamped into position. The non-printing areas of the form are covered with black velour strips that are held in place with magnets. The form which is now ready to photograph is swung into a vertical position in front of the camera. The copyboard is controlled hydraulically so it can move into position and lock itself. The camera is then loaded with photographic material which is placed on a vertical or horizontal stay flat plate depending on whether a right reading or wrong reading film or photographic print is desired. A button controls a battery of forty, 150-watt light bulbs which rotate around the fixed focus camera lens. The exposure time is then set. The rotating light insures an even distribution of light to all printing surfaces.

The end result can be either a smear-proof paper print, a film positive or negative.

The exposed material is then processed in the darkroom and left to dry.

One of the big advantages of Brightype is that worn and new type and plates can be mixed in one form and appear on the film in even color.

The Brightype camera can also be used to photograph mechanical paste-ups or other similar copy.

**Brightype is available from:**

**Ludlow Typograph Company**

**2032 Clybourn Avenue**

**Chicago 14, Illinois**



## CRONAPRESS

This conversion system is a daylight process which makes it possible to convert type forms, engravings, or combinations of both into negatives without using a camera or a darkroom.

To make this conversion, the form to be converted is placed on the vibration platform of the Cronapress #1 Clarifying Machine. A sheet of Cronapress Conversion Film with the emulsion side down is placed on the form. Then a vacuum frame covered with Du Pont Mylar Polyester Film and a frame containing over 10,000 tiny balls are locked into position. The form is then brought into contact with the conversion film by the vacuum frame.

Vibrations caused by the Clarifier's motor and eccentric cams set the balls in action. When the balls strike the film it presses the film against the metal form and causes the pressure sensitive coating on the film to collapse and become transparent. The film covering the nonprinting areas is not pressed against the metal form and remains opaque. The conversion takes from six to eight minutes depending on the type of form being converted.

The converted film is peeled away from the metal form which now has a reproduction of the form with a transparent image and a milky white background.

To increase the background density of the film, a black dye, called Du Pont Cronapress densifier, is applied to the coated side of the film. The cells of the still white and opaque areas of the film absorb the dye and increase its density to over 4.0. The transparent image of the film remains clear because there is no cellular structure to absorb the black

dye. The dye takes about 45 to 60 seconds to apply on a production basis.

After the film has been dyed it is immersed in a stabilizing solution called DuPont Cronapress Stabilizer for 20 seconds to make the dye water insoluble and the image permanent.

The negative is then rinsed in water, and swabbed to remove any residual dye from its surface and dried.

The negative can now be opaqued, stripped and stored like any other silver negative.

**Cronapress is available from:**

**E. I. Du Pont de Nemours & Co. (Inc.)**

**Photo Products Department**

**380 Allwood Road**

**Allwood Station**

**Clifton, N. J.**

## DIRECT IMAGE OFFSET

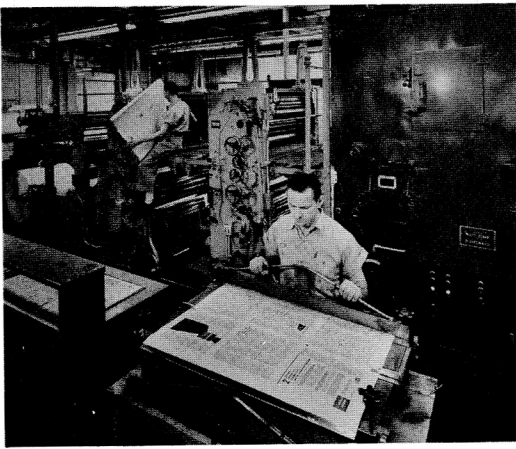
This type of plate is one that is used for short runs. They are sometimes referred to as direct image paper masters. They completely by-pass the photographic process.

To prepare such a plate for printing, a proof is pulled of a standing letterpress form using a special lithographic ink on a conventional proof press. Another method of preparing such a plate is to type directly on the plate with a typewriter equipped with a special ribbon.

It is also possible to draw directly on the plate with a pen, pencil, crayon, or airbrush with materials that have been specially prepared for this purpose.

**Direct Image Offset Plates are available from several manufacturers of offset plates.**





## THE d-i OFFSET PROCESS

This is a method of producing an offset plate directly from type, line or halftone engravings without photomechanical processing.

To make this conversion, a form is locked up and placed on the bed of a reproduction proof press. An impression is made to emboss a d-i offset plate with a specially formulated thermo-setting transfer ink. At this point, the plate can be touched up by applying a thin film of this ink to any part of the plate that shows up weak. After retouching the plate, it is put into an oven for five minutes where the temperature is between 450 and 500 degrees to heat-set the ink. The hardened ink becomes the printing image. No further development of the printing image is required. The baked plate is removed from the oven and treated with a d-i desensitizer. Enough desensitizer is poured on the center of the plate to cover the entire surface and spread over the plate with an etch brush or soft cellulose sponge for one minute. After one minute, the surplus solution is removed with a soft rubber squeegee or a sponge dipped in etch and wrung dry. The plate is wiped dry with soft cheese cloth or litho wipes making sure that no residual gum is left on the image area. The d-i offset plate is now ready for the debosser. This machine flattens the embossed backing and raises the impressed printing images back to the printing plane of the plate. When the plate is removed from the debossing machine it is ready for the press. The entire operation from the proof press where the impression is made on the plate to debossing of the plate should not exceed 15 minutes.

The d-i offset plate is a dry-grained aluminum foil that is laminated to an impregnated card stock .012 thick. The plates are made for all standard offset presses.

**The d-i Offset Plates are available from:**

**d-i Offset**

**5201 Old Orchard Rd.**

**Skokie, Ill.**

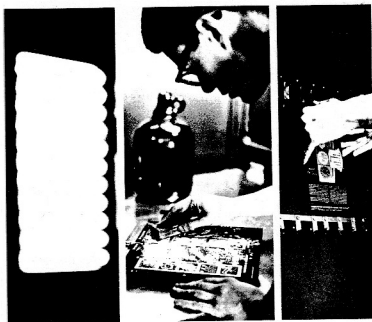
# MAKING NEGATIVES ON THE PROOF PRESS DIRECTLY FROM TYPE

The manufacturers of photographic materials have produced a thin base autopositive film that can be used to make negatives directly from type on the proof press. This process does not require a darkroom. All operations are performed under normal lighting conditions around the proof press. A successful method of doing this has been developed at the I.T.U. Training Center in Colorado Springs, Colorado, and a patent has been applied for.

To go directly from a hot metal letterpress form to a negative requires pulling a proof on the emulsion side of the autopositive film with Davidson's pre-printing blue ink. The film is allowed to dry by heat or air avoiding infra-red lights. The film is then placed in a tray of undiluted Dektol developer until the film turns black. When the film turns black, it is removed and dipped into water to remove the developer from the film. The ink on the film is then wiped off with a clean rag that is saturated with type wash. The film is then placed into a tray of photographic fixer until the film clears. The film is then washed off in water and hung to dry. This finished product is a right reading negative from which an offset plate can be made.

**More information on this method is available from:**

**I. T. U. Training Center  
301 S. Union Blvd.  
Colorado Springs, Colo.**



THE REPROTOPE PROCESS

...a, non-obsolescence features, make the best buy in electronic photomg)  
One of the most exciting new developments at Consolidated is the new Reprotype reproduction system which renders a film positive directly from type or halftones. The positive can then be used to directly "burn in" offset or letterpress plates. The new process involves two steps . . . 1) the preparation of the printing plate to be photographed 2) The photographing of the plate. In the preparation of the plate, a new graphite solution is sprayed on the plate and burnished off the surface with special powders. The plate is then ready for the camera.

A special copy board attachment on the standard Consolidated camera holds the type form in position while the camera is set for any normal enlargement or reduction. When the exposure is made a new lighting system called Oscilite (so named because of its oscillating characteristics) is then turned on and the exposure begins. The Oscilites begin oscillating to supply uniform lighting to illuminate the entire plate surface. There is only a three per cent illumination differential across the entire surface to be photographed. Shown in the composite photograph is a view of the solid area of illumination supplied by one bank of the Oscilites, the preparation process, and the positioning of the plate on the copyboard. The new Reprotype system can be adapted to any Consolidated Camera.

## REPROTOPE

This is a method of producing a film positive directly from type and halftone letterpress forms.

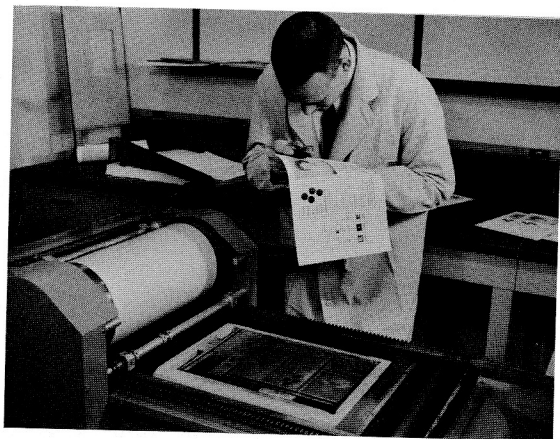
In this method of conversion, a graphite solution is sprayed on the type form. The surface of the type is then burnished off with special powders. The form is then ready for the camera.

A special copyboard that can be adapted to any Consolidated camera holds the type form. This camera can be set to enlarge, reduce or reproduce the same size as the form.

A lighting system called Oscilite is turned on and the exposure is made. The oscillating lights supply an even lighting which illuminates the entire form. One set of Oscilite lamps consists of 24 oscillating fluorescent lights capable of covering a 22" x 26" inch form.

The exposed material is then processed in a darkroom. The film positive can be used directly or a negative made from it.

The Reprotype is available from:  
The Consolidated International  
4501 South Western Avenue  
Chicago 9, Illinois



## SCOTCHPRINT

This is a dimensionally stable plastic printing stock which is used for conversion work. Scotchprint will not stretch, shrink, curl, crack or tear. It will take pen, pencil, typing, erasures, rubber cement and wax. It has a matte finish on one side and smooth finish on the other. The proof is pulled on the matte side of the sheet with conventional black reproduction inks.

A Scotchprint proof of a type form is pulled on a proof press to obtain a positive transparency. For the accurate reproduction of critical tones, it is recommended that a hard smooth manila packing be used. The drying time of the proof will be slightly longer than for paper. To speed up the drying, a warm air oven with a temperature not over 150 degrees can be used or French chalk can be dusted over the wet proof.

The proof is used to make a photographic negative or autopositive by contact or camera shot. To make a film contact, the proof is placed with the ink to the emulsion side of the film in the contact frame. The film is exposed so the light will pass through the Scotchprint proof to the film. The exposure is usually 50 percent more than film to film contacting. A gray scale can be placed between the proof and the film to determine proper exposure.

Scotchprint is available in 100 sheet boxes of 9" x 12", 12" x 18", and 20" x 24" and 500 sheet boxes of 9" x 12" and 12" x 18". Special sizes available upon request.

**Scotchprint is available from:**  
**3M Printing Products Division**  
**2501 Hudson Road**  
**St. Paul 19, Minnesota**

# HOT METAL PASTE-UP

This method of make-up is one that uses hot metal type, stripped or cut to a thickness of .152" or .065" depending on whether high or low base material is used.

There are a number of machines that are made specifically for stripping the type face from slugs, strip material, such as rules or individual letters cast on hot metal machines. The stripped slugs and material can be nailed, taped with double faced tape, or cemented in any position on base material.

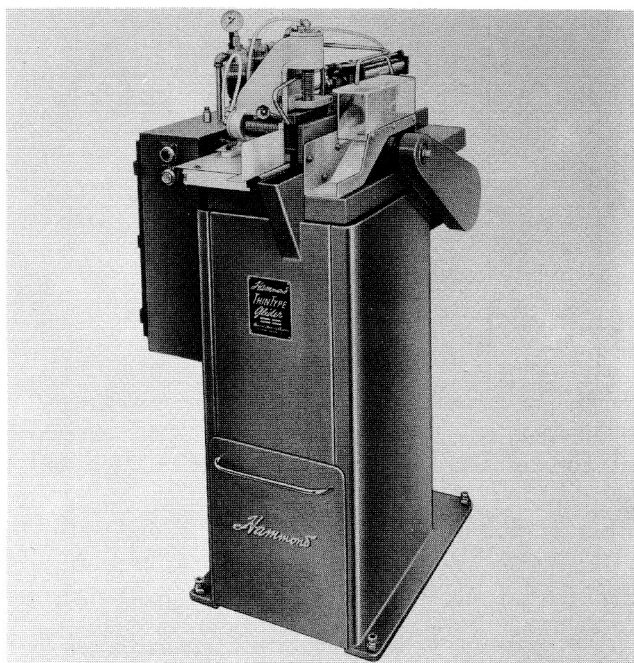
Many newspapers have been using this method for years in spots to avoid difficult ad ad make-up and intricate angle work. This same method is now being used to make up complete ads directly on Elrod, Monotype or Stereotype metal base as well as clear plexiglass with the aid of a light table.

When hot metal type comes from a typesetting machine, the compositor assembles it in blocks or individual lines to fit the machine it will be stripped on. The printing surface of the type is covered with a transparent tape and stripped to the required height. The type is then properly positioned according to the layout on base material covered with a double faced tape. The transparent tape on the face of the type is then removed.

A small electric soldering pen is sometimes used to join border strips in a job.

The Ludlow Typograph Company now makes mats and molds for their Ludlow and Elrod machines that will cast material the correct thickness for hot metal paste-up.

When a job is completely made up, a proof is pulled by conventional methods for proofreading.



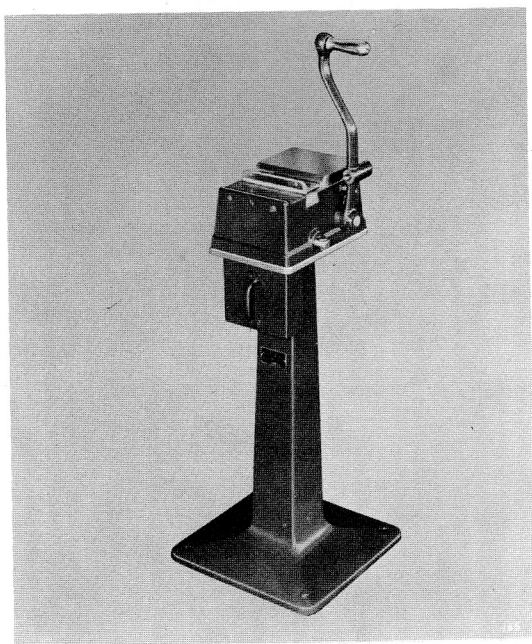
# HAMMOND

This machine is used to strip the type face from a quantity of slugs cast on hot metal machines to .065" or .152".

This machine can be obtained with a Fixed Slug Alignment Gauge that is factory set for sawing either thicknesses. Also available is a Combination Batter Shim for plants requiring both thicknesses.

This machine occupies a floor space of 24" x 36".

**The Hammond Thintype Glider Model TG-36 is available from:**  
**Hammond Machinery Builders, Inc.**  
**1600 Douglas Avenue**  
**Kalamazoo, Michigan**



## LUDLOW

This machine is used to strip a six or twelve point Ludlow slug off its base so it will be .153 high (the height of an 11 point plate.)

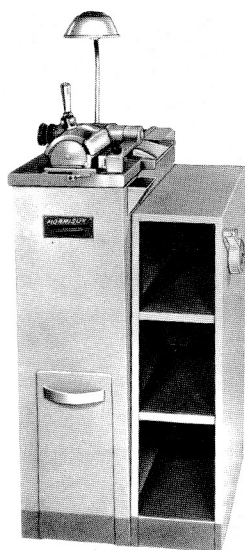
The machine is 36 inches high on a 16 square inch pedestal.

**The Ludlow Shell-Hi Slug Shear is available from:**

**The Ludlow Typograph Company**

**2032 Clybourn Avenue**

**Chicago, Illinois**



# MORRISON

This machine is built into a cabinet and is used to strip the printing face from any slug, strip material or single character cast on any hot metal machine for hot metal paste-up. It will take up to 1 1/4" x 42 picas at one cutting.

Another model of this machine comes as a cabinet or bench model and will handle slugs and material from 1 to 72 points or a single character up to 30 picas long.

**The Morrison Slug Strippers are available from:**

**The Morrison Company**

**125 West Melvina Street**

**Milwaukee 12, Wisconsin**



# STRIP-O-TYPE PROCESS

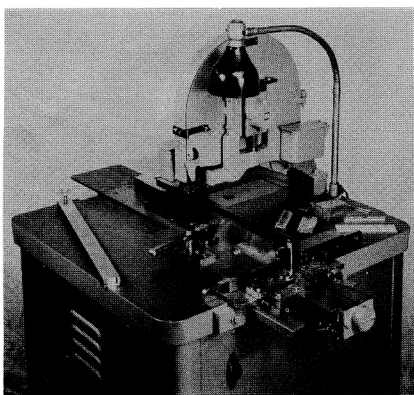
This is a process by which ads are made up by the hot metal paste-up method at Newsday, a Long Island, New York, newspaper.

The name Strip-O-Type is their trademark for which a patent has been applied for. A Hammond Glider saw has been converted by attaching horizontal and vertical locking devices to hold type groups in place while hot metal type is being stripped. This process uses plexiglass and a light table as well as hot metal base to mount stripped type.

Newsday has made their Strip-O-Type process available without restrictions to other newspapers and the allied publishing arts under a licensing arrangement.

**The Strip-O-Type Process is available from:**

**Newsday  
550 Stewart Avenue  
Garden City, New York**



## **ROUSE HOT MEAL PASTE-UP SAW**

This machine is a band saw equipped with an automatic feed that is used to strip the type face from any slug or strip material produced on any hot metal machine to .065" or .155". It will take entire copy blocks 2 1/2" high to the full 15" table capacity.

This machine occupies a floor space of 26 square inches.

The Rouse Hot Metal Paste-Up Saw is available from:

H. B. Rouse & Co.

2214-16 North Wayne Avenue

Chicago 14, Illinois

### *In Conclusion*

The information presented in this resource unit is an attempt to present under one cover the new methods which have in very recent years been introduced into the composing room for the benefit of those previously stated in the foreward and those presently employed in it.

As long as man can remember, the history of printing has been marked by constant advances. Looking back into history, we can see technological advancements made when Gutenberg first used movable type and when Mergenthaler's Linotype was first introduced at the turn of this century. Now, in our time we see phototypography, computers, electronics and other technological advancements. These changes have come so fast that it has been almost impossible for the average printer and teacher of printing to know exactly what is happening in the industry. There is no doubt that the industry will continue to change as a result of the great amount of research that is presently being done. At the present time, every manufacturer of a hot metal typesetting machine now has a photographic method of setting type directly on photographic film or paper or converting the product of his hot metal machine to the photographic process. There are also many new companies affiliated with the printing and graphic arts industry that did not exist a decade ago, as well as many old established companies that had very little or nothing to do with the printing industry and are now a very significant part of it.

Because of all this research, the entire printing industry has been enveloped by the space era and at the present time is in a very fluid state.

The information appearing in this book has been compiled from brochures and literatures made available to the author and is based on the manufacturers claims. The author is in no way responsible for any errors or claims made by the manufacturer.

